SIEMENS

Data sheet

6ES7317-2EK14-0AB0



SIMATIC S7-300 CPU 317-2 PN/DP, Central processing unit with 1 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

General information	
HW functional status	01
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
² t	1 A ² ·s
Power loss	
Power loss, typ.	4.65 W
Memory	
Work memory	
 integrated 	1 024 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
 Plug-in (MMC), max. 	8 Mbyte
 Data management on MMC (after last programming), min. 	10 y
Backup	
● present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.025 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs

for floating point arithmetic, typ.	0.16 µs
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	0.040 N
• Number, max.	2 048; Number range: 0 to 7999
• Size, max. OB	64 kbyte
• 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 - isochronous mode is possible either on DP or PROFINET IO
	(not simultaneously)
 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	10
• per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	540
Number Potentivity	512
Retentivity — adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	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	10 mg
— lower limit	10 ms
— upper limit IEC timer	9 990 s
present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Bata arous and then 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
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
Inputs	8 192 byte
Outputs	8 192 byte
Inputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Subprocess images	200 byte
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600
	bytes
Digital channels	
Inputs	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	
Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
 integrated 	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	
 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	

	4
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity retentive	1 h
	Yes; Must be restarted at each restart
Clock synchronization	Yes
 supported to MPI, master 	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock Yes
• to DP, slave	
• in AS, master	Yes
 in AS, slave on Ethernet via NTP 	Yes
	Yes; As client
Digital inputs	0
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	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	Yes
Interface types	
• RS 485	Yes
RS 485Output current of the interface, max.	Yes 200 mA
	200 mA
Output current of the interface, max.	
Output current of the interface, max. Protocols	200 mA
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave	200 mA Yes
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection	200 mA Yes Yes
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI	200 mA Yes Yes Yes No
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max.	200 mA Yes Yes Yes
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services	200 mA Yes Yes No 12 Mbit/s
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	200 mA Yes Yes Yes No 12 Mbit/s Yes
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes
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 communication — S7 communication, as client	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes
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	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 PROFIBUS DP master Intransmission rate, max. Number of DP slaves, max.	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes
 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. 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes
 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 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes
 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 Routing Routing 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes Yes Yes Yes
 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Global data communication Global communication, as server 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB
 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, as server PROFIBUS DP master Transmission rate, max. Kervices PG/OP communication S7 communication S7 communication S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication Services PG/OP communication Sources Services 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes
 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 PROFIBUS DP master Transmission rate, max. Services PROFIBUS DP master PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes
 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, as server PROFIBUS DP master Transmission rate, max. Kervices PG/OP communication S7 communication S7 communication S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication Services PG/OP communication Sources Services 	200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes

— Equidistance	Yes
 — Equidistance — 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	Yes; as subscriber
communication) — DPV1	Vee
Address area	Yes
	8 kbyte
— Inputs, max. — Outputs, max.	8 kbyte
User data per DP slave	o kuyie
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	2110,0
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
— S7 communication, as client	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	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	Yes
RJ 45 (Ethernet)	2
Number of ports integrated switch	
integrated switch Protocols	Yes
• MPI	No
PROFINET IO Controller	110
	Yes: Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device PROFINET CBA	Yes; Also simultaneously with IO Controller functionality
• PROFINET CBA	Yes; Also simultaneously with IO Controller functionality Yes
PROFINET CBAPROFIBUS DP master	Yes; Also simultaneously with IO Controller functionality Yes No
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave 	Yes; Also simultaneously with IO Controller functionality Yes No No
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication 	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server 	Yes; Also simultaneously with IO Controller functionality Yes No No
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy 	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes
PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy PROFINET IO Controller	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy 	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. 	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services 	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes 100 Mbit/s

— S7 communication	Yes; with loadable FBs, max. configurable connections: 16, 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, 	32
max.	
 Number of connectable IO Devices, max. 	128
 — 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, 	128
max.	
— of which in line, max.	128
 Activation/deactivation of IO Devices 	Yes
 — Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
— IO Devices changing during operation (partner	Yes
ports), supported	0
— Number of IO Devices per tool, max.	8
Device replacement without swap medium	Yes
— Send cycles	250 $\mu s,$ 500 $\mu s,$ 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.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
PROFINET IO Device Services	
PROFINET IO Device Services — PG/OP communication	Yes
PROFINET IO Device Services — PG/OP communication — Routing	Yes Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
PROFINET IO Device Services — PG/OP communication — Routing	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFIenergy	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFIenergy — Shared device	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device,	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. Submodules	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. Submodules — Number, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — Outputs, max. — User data per submodule, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device
PROFINET IO Device Services - PG/OP communication - Routing - S7 communication - Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max. Transfer memory - Inputs, max. - Outputs, max. - Outputs, max. - User data per submodule, max. PROFINET CBA	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte
PROFINET IO Device Services - PG/OP communication - Routing - S7 communication - Isochronous mode - IRT - PROFIenergy - Shared device - Number of IO Controllers with shared device, max. Transfer memory - Inputs, max. - Outputs, max. - Outputs, max. Submodules - Number, max. - User data per submodule, max. PROFINET CBA • acyclic transmission	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFIenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • cyclic transmission	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission Open IE communication	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission • Cyclic transmission • Number of connections, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission Open IE communication	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission • Cyclic transmission • Number of connections, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes Yes
PROFINET IO Device Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — PROFIenergy — Shared device — Number of IO Controllers with shared device, max. Transfer memory — Inputs, max. — Outputs, max. — Outputs, max. — User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission • cyclic transmission • Local port numbers used at the system end	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes Yes 16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
PROFINET IO Device Services - PG/OP communication - Routing - S7 communication - Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max. Transfer memory - Inputs, max. - Outputs, max. - User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission • Could port numbers used at the system end • Keep-alive function, supported	Yes Yes vith loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes 16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 Yes
PROFINET IO Device Services - PG/OP communication - Routing - S7 communication - Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max. Transfer memory - Inputs, max. - Outputs, max. - Outputs, max. - User data per submodule, max. PROFINET CBA • acyclic transmission • cyclic transmission • cyclic transmission • Local port numbers used at the system end • Keep-alive function, supported	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 No Yes Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device Yes 2 1 440 byte; Per IO Controller with shared device 1 440 byte; Per IO Controller with shared device 64 1 024 byte Yes Yes Yes 16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535

Media redundancy	
— Switchover time on line break, typ.	200 ms; PROFINET MRP
— Number of stations in the ring, max.	50
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	16
 — Data length for connection type 01H, max. 	1 460 byte
 — Data length for connection type 11H, max. 	32 768 byte
 — several passive connections per port, supported 	Yes
 ISO-on-TCP (RFC1006) 	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	16
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
 — Number of connections, max. 	16
— Data length, max.	1 472 byte
Web server	
supported	Yes
User-defined websites	Yes
Number of HTTP clients	5
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
 Size of GD packet (of which consistent), max. 	22 byte
S7 basic communication	22 5910
supported	Yes
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
07 communication	X_GET as server)
S7 communication	N.
supported	Yes
as serveras client	Yes Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB
• User data per job, max.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of
S5 compatible communication	the SFCs/FCs of S7 Communication)
supported	Yes; via CP and loadable FC
communication functions / PROFINET CBA (with set target	
Setpoint for the CPU communication load	50 %
	32
Number of remote interconnection partners	
Number of functions, master/slave Total of all master/slave connections	30
Total of all master/slave connections	1 000
• Data length of all incoming connections master/slave, max.	4 000 byte
Data length of all outgoing connections 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. performance data / PROFINET CBA / remote interconr 	1 400 byte
	500 ms
— Sampling interval, min.	
 Number of incoming interconnections 	100

	400
— Number of outgoing interconnections	100 2 222 h. tr
 Data length of all incoming interconnections, max. 	2 000 byte
Data length of all outgoing interconnections,	2 000 byte
max.	
— Data length per connection, max.	1 400 byte
performance data / PROFINET CBA / remote interconne	ction / with cyclic transfer / header
— Transmission frequency: Transmission interval,	10 ms
min.	000
 Number of incoming interconnections 	200
— Number of outgoing interconnections	200 2.000 http://www.com/com/com/com/com/com/com/com/com/com/
 Data length of all incoming interconnections, max. 	2 000 byte
— Data length of all outgoing interconnections,	2 000 byte
max.	
 Data length per connection, max. 	450 byte
performance data / PROFINET CBA / HMI variables via I	-
— Number of stations that can log on for HMI	3; 2x PN OPC/1x iMap
variables (PN OPC/iMap) — HMI variable updating	500 ms
— Number of HMI variables	200
— Data length of all HMI variables, max.	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy	·
— supported	Yes
— Number of linked PROFIBUS devices	16
— Data length per connection, max.	240 byte; Slave-dependent
Number of connections	
overall	32
usable for PG communication	31
- reserved for PG communication	1
— adjustable for PG communication, min.	1
 adjustable for PG communication, max. 	31
 usable for OP communication 	31
 reserved for OP communication 	1
 adjustable for OP communication, min. 	1
— adjustable for OP communication, max.	31
usable for S7 basic communication	30
- reserved for S7 basic communication	0
 — adjustable for S7 basic communication, min. 	0
— adjustable for S7 basic communication, max.	30
 usable for S7 communication — reserved for S7 communication 	16
	0 0
 — adjustable for S7 communication, min. — adjustable for S7 communication, max. 	16
 adjustable for S7 communication, max. total number of instances, max. 	32
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave
a dealer of roading	(active): max. 14; X2 as PROFINET: 24 max.
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.	30
 — of which control variables, max. 	14

Farrier	
Forcing	
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 / header	
Configuration software	
• STEP 7	Yes; V5.5 or higher
configuration / programming / header	
Command set	see instruction list
Nesting levels	8
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weights Weight, approx.	340 g
ντειχτι, αρμιολ.	570 g
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