SIEMENS

Data sheet

6AG1317-2EK14-7AB0



SIPLUS S7-300 CPU 317-2PN/DP based on 6ES7317-2EK14-0AB0 with conformal coating, -25...+70 °C, central processing unit with 1 MB work memory, 1st interface MPI/DP 12 Mbps, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

Figure similar

General information	
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 	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 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 word operations, typ. for fixed point arithmetic, typ.	0.03 µs 0.04 µs
for fixed point arithmetic, typ.	0.04 µs

	reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	04 KDyte
Number, max.	2.049: Number range: 0 to 7000
	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	
• 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	
 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	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	Ominited (infined only by IV-IVI capacity)
	512
Number Retentivity	512
Retentivity	Vec
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	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
S Notoninny adjustable	roo, na non rotain property on DD

Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
Inputs	8 192 byte
Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
Inputs	8 192 byte
Outputs	8 192 byte
 Inputs, adjustable 	8 192 byte
Outputs, adjustable	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Subprocess images	
 Number of subprocess images, max. 	1; 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	1
 integrated via CP 	1 4
Number of operable FMs and CPs (recommended)	4
• 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 period 	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	0 to 3
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 to DP, master 	Yes 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	
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	1; Ethernet, 2-port switch, 2*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
 Output current of the interface, max. 	200 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
- Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes
PROFIBUS DP master	40 MIL-14
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services — PG/OP communication	Yes
— PG/OP communication — Routing	Yes
	No
 — Global data communication — S7 basic communication 	Yes; I blocks only
— S7 basic communication	Yes
— S7 communication, as client	No
— S7 communication, as crient	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
 — Activation/deactivation of DP slaves — 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
прию, пил.	

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

	— of which in line, max.	61
	 — Number of connectable IO Devices for RT, max. 	128
 	— of which in line, max.	128
acklastaddascarbated, max. i	 Activation/deactivation of IO Devices 	Yes
		8
 Number of IO Devices per tool, max. Berice replacement without swap medium So and cycles Close So and CPU 31x, forthird Data" for more details) Address area Inputs, max. B ktyle Close So and cycles Close So and cycles Close So and CPU 31x, forthird Data" for more details) Address area Inputs, max. B ktyle Close So and cycles Close So and cycles PROCINET Or Device Services PROCINET OR Communication Yes Number of 10 Controllers with shared device, max. Services PROCINET Cad Services Services		Yes
- Device registerent without swap medium Yes - Send cycles 260 yas. 500 yas. 1ms. 2 ms. 4 ms (not in such Twith "high feasibility" option) - Updating time 260 yas. 500 yas. 1ms. 2 ms. 4 ms (not in such Twith "high feasibility" option) - Address area - - Inputs, max. 8 köyfe - Outputs, max. 1024 byte PROFENET IO Device - PROFENET IO Device - - PROF communication Yes - Routing Yes - Routing Yes - Notify Yes - Routing Yes - Houting Yes - Routing Yes - Houting Yes		8
	•	Yes
	— Send cycles	
- hpubs, max. B kbyle - Outputs, max. B kbyle - Used talls consistency, max. B kbyle FROENEET to Device - Services - - PG/OP communication Yes - Rotading Yes - Rotading Yes - Scruices - - No - - Scruices - - No - - Scruices - - No - - Scruices - - Scruices - - Scruices - - Scruices - - - Scruices - - Scruices -	— Updating time	250 µs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU
− Outputs. max. 1024 byte − User data consistency. max. 1024 byte PROFINETIO Device Services − FoOP communication Yes − Rouling Yes − Rouling Yes − Rouling Yes − Soft communication Yes − Isoft-knonous mode No − IRT Yes − PROFINETION Device Yes − Number of IoC Controllers with shared device, max. 2 Transfer memory Yes − Number of IoC Controllers with shared device, max. 1 440 byte; Per IoC Controller with shared device − Outputs, max. 1 440 byte; Per IoC Controller with shared device − User data per submodule, max. 1 440 byte; Per IoC Controller with shared device − Unter, max. 1 440 byte; Per IoC Controller with shared device − Unter, max. 1 440 byte; Per IoC Controller with shared device − Unter data per submodule, max. 1 424 byte − Unter data per submodule, max. 1 64 − User data per submodule, max. 1 62 byte PROFINET Cod Yes <t< td=""><td>Address area</td><td></td></t<>	Address area	
— User data consistency, max. 1 024 byte PROFINET IO Device Ferring PROFINET NO Device Ves Services Ves — RoUring Yes — Sorting Yes — Sorting Yes — Sorting Yes — Isochronous mode No — IRT Yes — PROFINET NO Device Yes — Number of Dochronous mode No — RoDeleversy Yes — PROFINET NO Device Yes — Shared device Yes — Number of Do Controllers with shared device, max. 2 — Number of DO Controllers with shared device, max. 1 440 byte; Per IO Controller with shared device — Ouputs, max. 1 440 byte; Per IO Controller with shared device — User data per submodule, max. 64 — User of acta per submodule, max. 64 — User of number subar device 0, 20, 21, 25, 80, 102, 135, 161, 6080, 34963, 34964, 65532, 55533, 65534,	— Inputs, max.	8 kbyte
PROFINET to Device Services - PG:OP communication Yes - Routing Yes - S7 communication Yes with indicable FBs, max. configurable connections: 16, max. number of instances: 32 - Isochronous mode No - IRT Yes - PROFlenergy Yes: With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device - Shared device Yes - Number of IO Controllers with shared device, max. 2 Transfer memory - Inputs, max. - Inputs, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device - User data per submodule, max. 1 024 byte PROFINET CEA - Protocols Yes PROFISE - Protocols Yes Protocols - Protocols - Protocols - Protocols - Protocols - Protocols - Open Lis communication - - Number of connections, max. 16 - Switcho	— Outputs, max.	8 kbyte
Services - PG/CP communication Yes - Rotling Yes - S7 communication Yes, With Isodable FBs, max. configurable connections: 16, max. number of Instances: 32 - Isochronous mode No - IRT Yes - PROFIlenergy Yes, With SFB 73 /74 prepared for loadable PROFIlenergy standard FB for I-Device - Shared device Yes - Number of IO Controllers with shared device, max. 2 Transfer memory Yes - Inpt, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device - Number, max. 1 440 byte; Per IO Controller with shared device - Submodules - - Number, max. 1 440 byte; Per IO Controller with shared device - Submodule, max. 1 420 byte PROFINET CBA - • acyclic transmission Yes • acyclic transmission Yes • Number of connections, max. 16 • Local port numbers used at the system end 0; 20; 21; 25; 30; 102, 135; 161, 8080; 34962, 34963, 34964, 65532, 65533, 65533, 65533, 65534, 65532, 65533, 65534, 65532, 65533, 65533, 65534, 65532, 65533, 65533, 65534, 65532, 65533, 65533, 65534, 65532, 65533, 65534, 65532, 65533, 65534, 65532, 65533, 65534, 65532, 65533, 65	— User data consistency, max.	1 024 byte
	PROFINET IO Device	
— Routing Yes — S7 communication Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 — Isochronous mode No — Isochronous mode No — Isochronous mode No — Isochronous mode No — IRT Yes — PROFlenergy Yes — Number of 10 Controllers with shared device, max. 2 Transfer memory — Inputs, max. — Inputs, max. 1 440 byte; Per IO Controller with shared device — Outputs, max. 1 440 byte; Per IO Controller with shared device — Outputs, max. 1 440 byte; Per IO Controller with shared device — Outputs, max. 1 440 byte; Per IO Controller with shared device — User data per submodule; max. 64 — User data per submodule; max. 16 — Outputs framsnission Yes — Outputs framsnission Yes — Output for connections, max. 16 — Number of connections per port, supported Yes — Number of connection type 01H, max. 2	Services	
RoulingYesS7 communicationYes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32Isochronous modeNoIsochronous modeNoIsochronous modeNoIsochronous modeNoIsochronous modeYesPROFlenergyYes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I- DeviceShared deviceYesNumber of 10 Controllers with shared device, max.2Inputs, max.1 440 byte; Per IO Controller with shared deviceOutputs, max.1 440 byte; Per IO Controller with shared deviceOutputs, max.1 440 byte; Per IO Controller with shared deviceOutputs, max.64User data per submodule, max.16Outputs max.16Outputs max.16Outputs max.16Number of connections, max.16Number of connections per port, supportedYes	— PG/OP communication	Yes
	- Routing	
- IRT Yes - PROFIenergy Yes; With SFB 73 / 74 prepared for loadable PROFIenergy standard FB for I- Device - Shared device Yes - Number of IO Controllers with shared device, max. 2 Transfer memory - - Inputs, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device - User data per submodule, max. 1 024 byte PROFINET CBA - • acyclic transmission Yes • color port IE communication Yes • Number of connections, max. 16 • (Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534,	— S7 communication	
	— Isochronous mode	No
Device Device - Shared device Yes - Number of IO Controllers with shared device, max. 2 Transfer memory - - Inputs, max. 1 440 byte; Per IO Controller with shared device Submodules - - Number, max. 64 - User data per submodule, max. 1024 byte PROFINET CBA - • cyclic transmission Yes • ocyclic transmission Yes • Open IE communication 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, sponted Yes PROFIsafe No Redundancy mode - Media redundancy - - Switchover time on line break, typ. 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of connections, max. 16 - Data length for connections per port, supported Yes - Number of connections per port, supported Yes - Data length for connections per port, supported Yes - Sola length for connections per port, supported Yes - Sola length for connections	— IRT	Yes
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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 64 - User data per submodule, max. 1 024 byte PROFINET CBA 64 • acyclic transmission Yes • ocyclic transmission Yes • ocyclic transmission Yes • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65535 • Keep-allve function, supported Yes PROFISE PROFISE PROFISION Yes • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65535 • Keep-allve function, supported Yes PROFISION Yes Protocols Vo Redundancy mode Yes Media redundancy 50 Open IE communication 16 • TCP/IP Yes; via integrated PROFINET Interface and loadable FBs • Data length for connections, max. 16 • Data length for connections per port, supported Yes • ISO-on-TCP (RFC10	— Shared device	Yes
- Inputs, max. 1 440 byte; Per IO Controller with shared device - Outputs, max. 1 440 byte; Per IO Controller with shared device Submodules 64 - User data per submodule, max. 1 024 byte PROFINET CBA 788 e-cyclic transmission Yes Open IE communication 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-allive function, supported Yes Protocols Yes Protocols Yes Protocols Yes Open IE communication 16 • Local port numbers used at the system end 50, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65533, 65535 • Keep-allive function, supported Yes Protocols Yes Protocols Yes Protocols Yes Media redundancy 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication Yes; via integrated PROFINET interface and loadable FBs - Data length for connection type 01H, max. 1460 byte - Data length for con	- Number of IO Controllers with shared device, max.	2
Outputs, max. 1 440 byte; Per IO Controller with shared device Submodules Number, max. 64 User data per submodule, max. 1 024 byte PROFINET CBA	Transfer memory	
Submodules 64 - Number, max. 1024 byte PROFINET CBA 1024 byte • acyclic transmission Yes • cyclic transmission Yes • ocyclic transmission Yes • Open IE communication 16 • Number of connections, max. 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, supported Yes Protocols Yes PROFISafe No Redundancy mode Yes; Yes Media redundancy - - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication Yes; via integrated PROFINET interface and loadable FBs - Number of connection type 01H, max. 16 - Data length for connections prot, supported Yes; via integrated PROFINET interface and loadable FBs - Data length for connections prot, supported Yes; via integrated PROFINET interface and loadable FBs - Data length, max. 16 - Data length, max. 2768 byte - IData length, ma	— Inputs, max.	1 440 byte; Per IO Controller with shared device
Number, max. 64 User data per submodule, max. 1 024 byte PROFINET CBA • acyclic transmission Yes • cyclic transmission Yes • cyclic transmission Yes Open IE communication 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, supported Yes Protocols	— Outputs, max.	1 440 byte; Per IO Controller with shared device
User data per submodule, max.1 024 bytePROFINET CBA• acyclic transmissionYes• cyclic transmissionYesOpen IE communication16• Local port numbers used at the system end65534, 65535• Cocal port numbers used at the system end65534, 65535• Keep-alive function, supportedYesProtocolsProtocolsProtocolsVesProtocolsVesProtocolsVes• Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communication16• CPCPIPYes; via integrated PROFINET Interface and loadable FBs• Data length for connection sper port, supportedYes• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs• Data length, max.16• Data length, max.16• Durber of connections, max.16• Data length, max.16• Data length, max.16• Data length, max.16• Durber of connections, max.16• Data length, max.16 <tr< td=""><td>Submodules</td><td></td></tr<>	Submodules	
PROFINET CBA • acyclic transmission Yes cyclic transmission Yes Open IE communication 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, supported Yes Protocols Protocols PROFIsafe No Redundancy mode Kedundancy Media redundancy 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication 16 - TCP/IP Yes; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length for connection type 01H, max. 1460 byte - several passive connections per port, supported Yes; via integrated PROFINET interface and loadable FBs - 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 interfac	— Number, max.	64
• acyclic transmissionYes• cyclic transmissionYesOpen IE communication16• Number of connections, max.16• Local port numbers used at the system end0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535• Keep-alive function, supportedYesProcorlsProcorlsProcorlsMedia redundancy- Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communication• TCP/IPYes; via integrated PROFINET interface and loadable FBs- Data length for connection type 01H, max.1460 byte- Data length for connections, max.16- several passive connections per port, supportedYes• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Number of connections, max.16- Data length for connections, max.16- Store (RFC1006)Yes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.16- Data length, max.16 <td>— User data per submodule, max.</td> <td>1 024 byte</td>	— User data per submodule, max.	1 024 byte
• cyclic transmissionYesOpen IE communication• Number of connections, max.16• Local port numbers used at the system end.0523, 2653, 66535, 66535, 66535, 66535, 66535, 66535, 66535, 66535• Keep-alive function, supportedYesProtocolsProtocolsProtocols- Switchover time on line break, typ.200 ms; PROFINET MRP- Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communication16- TCP/IPYes; via integrated PROFINET interface and loadable FBs- Data length for connection type 01H, max.1460 byte- several passive connections per port, supportedYes- several passive connections, max.16- Number of connections, max.16- Subter of connections, max.16- Subter of connections, max.16- Data length for connection type 01H, max.32 768 byte- several passive connections, max.16- Number of connections, max.16- Number of connections, max.16- Duta length, max.32 768 byte- Number of connections, max.16- Number of connections, max.16- Number of connections, max.16- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Duta length, max.32 768 byte- Number of connections, max.16- Duta length, max.16- N	PROFINET CBA	
• cyclic transmissionYesOpen IE communication• Number of connections, max.16• Local port numbers used at the system end.0523, 2653, 66535, 66535, 66535, 66535, 66535, 66535, 66535, 66535• Keep-alive function, supportedYesProtocolsProtocolsProtocols- Switchover time on line break, typ.200 ms; PROFINET MRP- Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communication16- TCP/IPYes; via integrated PROFINET interface and loadable FBs- Data length for connection type 01H, max.1460 byte- several passive connections per port, supportedYes- several passive connections, max.16- Number of connections, max.16- Subter of connections, max.16- Subter of connections, max.16- Data length for connection type 01H, max.32 768 byte- several passive connections, max.16- Number of connections, max.16- Number of connections, max.16- Duta length, max.32 768 byte- Number of connections, max.16- Number of connections, max.16- Number of connections, max.16- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Duta length, max.32 768 byte- Number of connections, max.16- Duta length, max.16- N	acyclic transmission	Yes
• Number of connections, max. 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, supported Yes Protocols Protocols Media redundancy 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication 7 • TCP/IP Yes; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length for connection type 01H, max. 1460 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 - Number of connections, max. 16 - Data length for 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 - Data length, max. 32 768 byte - Data length, max. 16 <	cyclic transmission	
• Number of connections, max. 16 • Local port numbers used at the system end 0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 • Keep-alive function, supported Yes Protocols Protocols Media redundancy 200 ms; PROFINET MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication 7 • TCP/IP Yes; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length for connection type 01H, max. 1460 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 - Number of connections, max. 16 - Data length for 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 - Data length, max. 32 768 byte - Data length, max. 16 <	Open IE communication	
• Local port numbers used at the system end0, 20, 21, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535• Keep-alive function, supportedYesProtocolsPROFIsafeNoRedundancy modeMedia redundancy200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communication• TCP/IPYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length for connection type 01H, max.1460 byte- several passive connections per port, supportedYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length for connections, max.16- Several passive connections, max.16- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.16- Number of connections, max.16- Data length, max.16- Data length, max		16
• Keep-alive function, supported Yes Protocols PROFIsafe No Redundancy mode Media redundancy		
Protocols PROFIsafe No Redundancy mode Media redundancy - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication 50 • 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; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length, for connections per port, supported Yes; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length, max. 32 768 byte - Data length, max. 32 768 byte • UDP 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. 1472 byte<	Keep-alive function, supported	
PROFIsafe No Redundancy mode Media redundancy — Switchover time on line break, typ. 200 ms; PROFINET MRP — Number of stations in the ring, max. 50 Open IE communication 50 • 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; via integrated PROFINET interface and loadable FBs — Number of connections, max. 16 — Data length, for connections per port, supported 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 — Number of connections, max. 16 — Data length, max. 16 — Number of connections, max. 16 — Data length, max. 16 — Data length, max. 16 — Data length, max. 16		
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- Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50Open IE communicationYes; 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, supportedYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.16- Data length, max.16- Data length, max.16- Number of connections, max.16- Number of connections, max.16- Data length, max.1472 byte		
- Number of stations in the ring, max.50Open IE communicationYes; 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, supportedYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.32 768 byte- Number of connections, max.16- Data length, max.16- Number of connections, max.16- Number of connections, max.16- Data length, max.1472 byte	-	200 ms; PROFINET MRP
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- 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, supportedYes• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.32 768 byte• UDPYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.32 768 byte• UDPYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.1472 byte	•	Yes: via integrated PROFINET interface and loadable EBs
- 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, supportedYes• ISO-on-TCP (RFC1006)Yes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Data length, max.32 768 byte• UDPYes; via integrated PROFINET interface and loadable FBs- Number of connections, max.16- Number of connections, max.32 768 byte- Number of connections, max.16- Data length, max.16- Data length, max.1472 byte		-
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- 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. 16 - Data length, max. 1472 byte		
- 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		
• UDP Yes; via integrated PROFINET interface and loadable FBs - Number of connections, max. 16 - Data length, max. 1 472 byte		
— Number of connections, max. 16 — Data length, max. 1 472 byte	-	
— Data length, max. 1 472 byte		-
Web server		1 4/2 byte
	Web server	

e supported	Yes
 supported User-defined websites 	Yes
Number of HTTP clients	5
communication functions / header	Vaa
PG/OP communication	Yes
Data record routing	Yes
Global data communication	Vee
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 22 http://www.angle.com/angle.com/angle.com/angle.com/angle.com/angle.com/angle.com/angle.com/angle.com/angle.co
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max. S7 basic communication	22 byte
	Vee
communication function / S7 basic communication	Yes 76 http
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 X_GET as server)
S7 communication	
supported	Yes
• as server	Yes
as client	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 the
	SFCs/FCs of S7 Communication)
S5 compatible communication	
supported	Yes; via CP and loadable FC
communication functions / PROFINET CBA (with set target commu	
Setpoint for the CPU communication load	50 %
Number of remote interconnection partners	32
Number of functions, master/slave	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. 	1 400 byte
performance data / PROFINET CBA / remote interconnection /	/ with acyclic transfer / header
— Sampling interval, min.	500 ms
 Number of incoming interconnections 	100
 Number of outgoing interconnections 	100
 Data length of all incoming interconnections, max. 	2 000 byte
 — Data length of all outgoing interconnections, max. 	2 000 byte
 — data volume / as user data for remote interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum 	1 400 byte
performance data / PROFINET CBA / remote interconnection /	/ with cyclic transfer / header
— Transmission frequency: Transmission interval, min.	10 ms
 – number of remote connections to input variables / 	200
with PROFINET CBA / with cyclic transfer / maximum	
 number of remote connections to output variables / with cyclical transfer / with PROFINET CBA / maximum 	200
 data volume / as user data for remote interconnections with input variables / with cyclical transfer / with PROFINET CBA / maximum 	2 000 byte
 — data volume / as user data for remote interconnections with output variables / with cyclical transfer / with PROFINET CBA / maximum 	2 000 byte
 — data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum 	450 byte

	performance data / PROFINET CBA / HMI variables via PROF	FINET / acyclic / header
(HN OPCMMap)500 ns- Humber of HMI variables200- Deta isegity of all HMI variables200 byte- Deta isegity of all HMI variables200 byte- Deta isegity of all HMI variables200 byte- mismo add n / EROCHET CBA / EROCHES (Save dependent200 byte- Mumber of inkers PROFIBUS devices15- Deta isegity per commenton, max.200 byte: Slave-dependent- variable for PG communication1- adjustable for PG communication, max.31- reserved for PG communication, max.31- reserved for PG communication, max.31- adjustable for PG communication, max.31- adjustable for PG communication, max.31- adjustable for PG communication, max.30- adjustable for PG communication, max.30- adjustable for PG communication, max.30- adjustable for ST communication, max.32- traserved for ST communication, max.32- variable for	•	
		·,
	— HMI variable updating	500 ms
performance tab. / PROFIBUS CBA / PROFIBUS growy functionality / header Number of Inited PROFIBUS devices 18 Data length per connection, max. 240 byte: Slavo-dependent overall 32 use to respect to the communication 1	 — Number of HMI variables 	200
	 — Data length of all HMI variables, max. 	2 000 byte
- Number of Insel PPO/FIRUS devices 240 byte; Slave-dependent Number of connections 32 • usable for PG communication 1	performance data / PROFINET CBA / PROFIBUS proxy functi	onality / header
— Data length per connection, max. 32 • overall 32 • usable for PC communication 1 - adjustable for PC communication, min. 1 - adjustable for PC communication, max. 31 - excered for PC communication, max. 1 - adjustable for OP communication, max. 31 - reserved for S7 box munication, max. 31 - adjustable for OP communication, max. 31 - adjustable for OP communication, max. 31 - adjustable for S7 basic communication, max. 30 - escered for S7 basic communication, max. 30 - adjustable for S7 basic communication, max. 30 - adjustable for S7 basic communication, max. 30 - adjustable for S7 communication 30 - adjustable for S7 communication, max.	— supported	Yes
Number of connections 32 • usuable for PG communication 1 adjustable for PG communication, min. 1 adjustable for PG communication, min. 1 adjustable for PG communication, min. 1	 — Number of linked PROFIBUS devices 	16
overall overall subole for 9C communication	 — Data length per connection, max. 	240 byte; Slave-dependent
• usable for PG communication 31 - reserved for PG communication, min. 1 - adjustable for PG communication, min. 31 - adjustable for PG communication, max. 31 - reserved for OP communication, max. 31 - adjustable for ST basic communication, max. 30 - adjustable for ST costic communication, max. 30 - adjustable for ST costic communication, max. 30 - adjustable for ST communication, max. 31 - adjustable for ST communication, max. 30 - adjustable for ST communication, max. 32 - adjustable for ST communication, max. 32 - adjustable for ST communication, max. 300 -	Number of connections	
- reserved for PG communication, min. 1 - adjustable for PG communication, max. 31 - usable for CP communication 31 - usable for CP communication 1 - adjustable for CP communication, max. 31 - adjustable for CP communication, max. 31 - adjustable for CP communication, max. 31 - adjustable for SP basic communication, max. 30 - reserved for SP basic communication, min. 0 - adjustable for SP basic communication, min. 0 - adjustable for SP consect communication, max. 30 - reserved for SP communication, min. 0 - adjustable for SP communication, max. 32 - adjustable for S	overall	32
	 usable for PG communication 	31
- adjustable for PG communication, max. 31 • usable for OP communication - reserved for OP communication, min adjustable for OP communication, max. 31 • usable for S7 basic communication, max. 31 • usable for S7 basic communication, max. 31 • usable for S7 basic communication, max. 30 • adjustable for S7 basic communication, max. 31 • usable for S7 communication, max. 32 • usable for S7 communication, max. 33 • adjustable for S7 communication, max. 34 • adjustable for S7 communication, max. 35 • adjustable for S7 communication, max. 36 • adjustable for S7 communication, max. 37 • adjustable for S7 communication, max. 38 • usable for S7 communication, max. 39 • adjustable for S7 communication, max. 30 • adjustable for S7 communication, max. 31 • adjustable for S7 communication, max. 30 • adjustable for S7 communication, max. 31 • adjustable for S7 communication, max. 32 • adjustable for S7 communication, max. 32 • adjustable for S7 communication, max. 30 • adjustable for S7 communication, max. 31 • adjustable for S7 communication, max. 32 • adjustable for S7 communication, max. 32 • adjustable for S7 communication, max. 33 • adjustable for S7 communication, max. 34 • adjustable for S7 communication, max. 35 • adjustable for S7 communication, max. 36 • adjustable for S7 communication, max. 37 • adjustable for S7 communication, max. 38 • adjustable for S7 communication, max. 39 • adjustable for S7 communication, max. 30 • adjustable for To Tomesage functions, max. 30 • adjustable for Tomesage functions, max. 30 • adjustable for Tomesage functions, max. 30 • adjustable for Adjustable, max. 30 • adjustable for Adjustable, max. 30 • adjustable for Adjus	 reserved for PG communication 	1
• usable for OP communication 1 - reserved for OP communication, min. 1 - adjustable for OP communication, max. 31 • usable for S7 basic communication 0 - reserved for S7 basic communication, max. 0 - adjustable for S7 basic communication, max. 0 - adjustable for S7 basic communication, max. 0 - adjustable for S7 communication, max. 0 - adjustable for S7 communication, max. 0 - adjustable for S7 communication, max. 16 - adjustable for S7 communication, max. 16 - adjustable for S7 communication, max. 18 - adjustable for S7 communication, max. 19 Number of login stations for message functions. 22 - fordi	— adjustable for PG communication, min.	1
- reserved for OP communication, min. 1 - adjustable for OP communication, max. 31 - usable for ST basic communication 00 - reserved for ST basic communication, max. 00 - adjustable for ST communication, max. 00 - adjustable for ST communication, max. 16 - adjustable for ST communication, max. 14 Status	— adjustable for PG communication, max.	31
	 usable for OP communication 	31
	 reserved for OP communication 	1
	— adjustable for OP communication, min.	1
• usable for S7 basic communication 30 - reserved for S7 cosic communication, min. 0 - adjustable for S7 basic communication, min. 0 - adjustable for S7 communication 16 - reserved for S7 communication, min. 0 - adjustable for S7 communication, max. 16 - usable for S7 communication, max. 12 - usable for S7 communication, max. 132 - usable for S7 communication, max. 14 - adjustable for S7 communication, max. 14 - usable for s7 communication 22 • usable for s7 communication, max. 32 - usable for s7 communication, max. 32 - usable for S7 communication, max. 32 - usable for S7 communication 22 - reserved for S7 communication 32	-	31
	-	
• usable for S7 communication 16 - reserved for S7 communication, min. 0 - adjustable for S7 communication, max. 16 • 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. 13; X2 as PROFINET: 24 max. S7 message functions X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 13; X2 as PROFINET: 24 max. S7 message functions 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 Yes Status foork Yes; Up to 2 simultaneously Single step Yes • Status/control variable Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Variables Inputs, outputs, memory bits, DB, times, counters • Orkinds status variables, max. 30 - of which control variables, max. 10 • Orkinds for instatus, max. 10 • Orkinds of oursibules, max. 500 • Orkinds for instatus, max. 500 • of which notice, max. 500 • Orkinds for instatus, max. 500 • Orkinds for instatus, max. 500	-	
- reserved for \$7 communication 0 adjustable for \$7 communication, min. 0 adjustable for \$7 communication, max. 16 • 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. 11; X2 as PROFINET: 24 max. S7 message functions 22; Depending on the configured connections for PG/OP and \$7 basic communication Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 300 Process diagnostic messages Yes; Up to 2 simultaneously Situls block Yes; Up to 2 simultaneously Situls control variables Yes • Variables Yes • Number of trakspoints 4 Status/control variables, max. 30 • Of which status variables, max. 30 • Of which status variables, max. 30 • Of which status variables, max. 4 Status/control variables, max. 30 • Of which outrol variables, max. 30 • Of which outrol variables, max. 30 • Of which outrol variables, max. 10 • Of which outrol variables, max. 10 • Of which outrol variables, max. 10 • Ording Yes • Ording Yes	-	
• 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. 32; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes simultaneously active Alarm-S block, max. 300 Test commissioning functions Yes Status block Yes; Up to 2 simultaneously Single step Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which control variables, max. 14 Forcing Yes • Forcing Yes • Forcing variables, max. 10 Diagnostic buffer Yes • present Yes • Number of entries, max. 500 - adjustable No	-	
• 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. 57 message functions 22; 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 300 Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control Yes • Status/control variables, max. 30 - of which control variables, max. 10 • Forcing Yes • Forcing, variables, max. 10 • Present Yes • present Yes • Number of entries, max. 500 - adjustable No - adjustable No - adjustable No - adjustable Yes; From 10 to 499 - preset 10	-	
14: X2 as PROFINET: 24 max. 57 message functions Number of login stations for message functions, max. 22: 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 Yes; Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control Yes • Status/control variables, max. 30 • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 • Forcing Yes • Forcing Yes • Forcing, variables, max. 14 Proces Inputs, outputs, memory bits, DB, times, counters • Number of variables, max. 10 • Forcing Yes • Forcing, variables, max. 10 • Diagnostic buffer - • present Yes • Number of entries, max. 500 - adjustable No -		
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 Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control * • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which status variables, max. 14 Forcing Yes • Forcing Yes • Number of variables, max. 10 Diagnostic buffer Yes • 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 <td></td> <td></td>		
CommunicationProcess diagnostic messagesYessimultaneously active Alarm-S blocks, max.300Test commissioning functionsYes; Up to 2 simultaneouslySingle stepYesNumber of breakpoints4Status/controlStatus/control variable• Status/control variables, max.30- of which status variables, max.30- of which control variables, max.30- of which control variables, max.30- of which control variables, max.14ForcingYes• Forcing, variables, max.10Diagnostic bufferVes• Number of variables, max.500• Number of variables, max.500- adjustableNo- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset0- or able read outYes	S7 message functions	
Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 300 Test commissioning functions	Number of login stations for message functions, max.	
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 variable • Status/control variable • Variables • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which control variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which powerfail-proof 300 - of which powerfail-proo		
Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control 4 Status/control variable Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which control variables, max. 14 Forcing Yes • Forcing, variables, max. 10 Diagnostic buffer 10 • 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		
Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control variable Yes • Status/control variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 - of which control variables, max. 14 Forcing Yes • Forcing, variables Inputs, outputs • Forcing, variables, max. 10 Diagnostic buffer 9 • 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 - adjustable Yes; From 10 to 499 - preset 10		300
Single step Yes Number of breakpoints 4 Status/control		
Number of breakpoints 4 Status/control Status/control variable Status/control variables Variables Inputs, outputs, memory bits, DB, times, counters Number of variables, max. - of which status variables, max. - of which status variables, max. - of which control variables, max. Number of entries, max. - adjustable - of which powerfail-proof No (No) (No) the last 100 entries are retained Number of entries readable in RUN, max. - adjustable - preset - preset - preset - adjustable - preset - adjustable - preset - adjustable - adjustable - preset - adjustable - adjustable - adjustable - adjustable - adjustable<td></td><td></td>		
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. 30 - of which control variables, max. 14 Forcing Yes • Forcing, variables Inputs, outputs • Forcing variables, max. 10 Diagnostic buffer 500 • 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 Yes		
• Status/control variableYes• VariablesInputs, outputs, memory bits, DB, times, counters• Number of variables, max.30- of which status variables, max.30- of which control variables, max.14Forcing• ForcingYes• Forcing, variablesInputs, outputs• Number of variables, max.10• Number of variables, max.10• Number of variables, max.00• Number of variables, max.500• presentYes• of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes		4
• VariablesInputs, outputs, memory bits, DB, times, counters• Number of variables, max.30- of which status variables, max.30- of which control variables, max.14ForcingYes• Forcing, variablesInputs, outputs• Forcing, variables, max.10Diagnostic bufferYes• presentYes• Number of entries, max.500- adjustableNo- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes		
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of which control variables, max.14ForcingYes• Forcing, variablesInputs, outputs• Number of variables, max.10Diagnostic bufferYes• presentYes• Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes• can be read outYes		
Forcing• ForcingYes• Forcing, variablesInputs, outputs• Number of variables, max.10Diagnostic buffer• presentYes• Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service data• can be read outYes		
• ForcingYes• Forcing, variablesInputs, outputs• Number of variables, max.10Diagnostic bufferYes• presentYes• Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes		14
• Forcing, variablesInputs, outputs• Number of variables, max.10Diagnostic bufferYes• presentYes• Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes• can be read outYes	Forcing	
• 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	-	Yes
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 Yes	 Forcing, variables 	Inputs, outputs
• presentYes• Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes		10
Number of entries, max.500- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service dataYes• can be read outYes	Diagnostic buffer	
- adjustableNo- of which powerfail-proof100; Only the last 100 entries are retained• Number of entries readable in RUN, max.499- adjustableYes; From 10 to 499- preset10Service data10• can be read outYes	• present	Yes
of which powerfail-proof 100; Only the last 100 entries are retained •	 Number of entries, max. 	500
Number of entries readable in RUN, max. 499	— adjustable	No
	— of which powerfail-proof	100; Only the last 100 entries are retained
Service data • can be read out Yes		-
• can be read out Yes	Number of entries readable in RUN, max.	499
	 Number of entries readable in RUN, max. — adjustable 	499 Yes; From 10 to 499
Standards, approvals, certificates	 Number of entries readable in RUN, max. — adjustable — preset 	499 Yes; From 10 to 499
	Number of entries readable in RUN, max. — adjustable — preset Service data • can be read out	499 Yes; From 10 to 499 10

CE mark	Yes
UL approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; @ 60°C for UL/ATEX/FM use
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m
Ambient air temperature-barometric pressure-altitude	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068- 2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems — to biologically active substances according to EN	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna);
60721-3-3 — to chemically active substances according to EN	Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity
60721-3-3 — to mechanically active substances according to EN	degree 3); * Yes; Class 3S4 incl. sand, dust, *
60721-3-3	
Use on ships/at sea	
 — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 — to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
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
- oser program protection/password protection	100

Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	340 g

last modified:

9/7/2023 🖸