6ES7317-2EK14-0AB0

## **Data sheet**



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	
<ul> <li>Programming package</li> </ul>	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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
<ul> <li>Repeat rate, min.</li> </ul>	1 s
Input current	
Current consumption (rated value)	750 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	4 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.65 W
Memory	
Work memory	
• integrated	1 024 kbyte
<ul><li>expandable</li></ul>	No
Load memory	
<ul><li>Plug-in (MMC)</li></ul>	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.025 μs
for word operations, typ.	0.03 μs
for fixed point arithmetic, typ.	0.04 μs

for floating point arithmetic, typ.	0.16 μs
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	
<ul><li>Number, max.</li></ul>	2 048; Number range: 1 to 16000
Size, max.	64 kbyte
FB	
<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55, 56, 57
Number of isochronous mode OBs	1; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
<ul> <li>Number of synchronous error OBs</li> </ul>	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	16
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
• Nullipei	

Potentivo data area (incl. timore, countare flage), may	256 khyto
Retentive data area (incl. timers, counters, flags), max.  Flag	256 kbyte
• Size, max.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
-	
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	V
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
<ul><li>Inputs</li></ul>	8 192 byte
<ul><li>Outputs</li></ul>	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	8 192 byte
Outputs	8 192 byte
Inputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Subprocess images	230 byte
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600
• Number of subprocess images, max.	bytes
Digital channels	
• Inputs	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	1 02 1
• Inputs	4 096
— of which central	
Outputs	256 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     Region time	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
period Operating hours counter	off
LINERSTING DOUGE COUNTER	

N	
• Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	V
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	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; 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
Output current of the interface, max.	200 mA
Protocols	
• MPI	Yes
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>PROFIBUS DP slave</li> </ul>	Yes
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
<ul><li>— PG/OP communication</li></ul>	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	Yes
<ul> <li>S7 basic communication</li> </ul>	Yes
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	No; but via CP and loadable FB
— S7 communication, as server	Yes
PROFIBUS DP master	
• Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	No
<ul> <li>— S7 communication, as server</li> </ul>	Yes

Equidistance	Voe
— Equidistance — Isochronous mode	Yes Yes; OB 61; isochronous mode can only be used alternatively on
— Isociiionous mode	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.	
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes; as subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>— S7 basic communication</li> </ul>	No
— S7 communication	Yes
<ul> <li>— S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes; Connection configured on one side only
Direct data exchange (slave-to-slave	Yes
communication)	N.
— DPV1	No
Transfer memory	044 h. 4-
— Inputs	244 byte
— Outputs	244 byte
2. Interface	PROFINET
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	
a DI 45 (Ethornat)	Voc
• RJ 45 (Ethernet)	Yes
<ul> <li>Number of ports</li> </ul>	2
<ul><li>Number of ports</li><li>integrated switch</li></ul>	
Number of ports     integrated switch  Protocols	2 Yes
<ul> <li>Number of ports</li> <li>integrated switch</li> </ul> Protocols <ul> <li>MPI</li> </ul>	2 Yes No
<ul> <li>Number of ports</li> <li>integrated switch</li> </ul> Protocols <ul> <li>MPI</li> <li>PROFINET IO Controller</li> </ul>	2 Yes  No Yes; Also simultaneously with IO-Device functionality
Number of ports  integrated switch  Protocols  MPI  PROFINET IO Controller  PROFINET IO Device	2 Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality
<ul> <li>Number of ports</li> <li>integrated switch</li> </ul> Protocols <ul> <li>MPI</li> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>PROFINET CBA</li> </ul>	2 Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes
<ul> <li>Number of ports</li> <li>integrated switch</li> </ul> Protocols <ul> <li>MPI</li> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>PROFINET CBA</li> <li>PROFIBUS DP master</li> </ul>	2 Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No
Number of ports  integrated switch  Protocols  MPI  PROFINET IO Controller  PROFINET IO Device  PROFINET CBA  PROFIBUS DP master  PROFIBUS DP slave	2 Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No
Number of ports integrated switch  Protocols  MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP
Number of ports integrated switch  Protocols  MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes
Number of ports integrated switch  Protocols  MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP
Number of ports integrated switch  Protocols  MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server Media redundancy  PROFINET IO Controller	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes
Number of ports  integrated switch  Protocols  MPI  PROFINET IO Controller  PROFINET IO Device  PROFINET CBA  PROFIBUS DP master  PROFIBUS DP slave  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes
Number of ports  integrated switch  Protocols  MPI  PROFINET IO Controller  PROFINET IO Device  PROFINET CBA  PROFIBUS DP master  PROFIBUS DP slave  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes  100 Mbit/s
Number of ports  integrated switch  Protocols  MPI  PROFINET IO Controller  PROFINET IO Device  PROFINET CBA  PROFIBUS DP master  PROFIBUS DP slave  Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.	Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes 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
IDT	PROFIBUS DP or PROFINET IO
— IRT — Shared device	Yes Yes
— Prioritized startup	Yes
<ul> <li>Number of IO devices with prioritized startup, max.</li> </ul>	32
Number of connectable IO Devices, max.	128
— Of which IO devices with IRT, max.	64
— of which in line, max.	64
<ul> <li>Number of IO Devices with IRT and the option</li> </ul>	128
"high flexibility"	
— of which in line, max.	61
<ul> <li>Number of connectable IO Devices for RT,</li> </ul>	128
max.	400
— of which in line, max.	128
Activation/deactivation of IO Devices	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
— IO Devices changing during operation (partner)	Yes
ports), supported	
<ul> <li>Number of IO Devices per tool, max.</li> </ul>	8
<ul> <li>Device replacement without swap medium</li> </ul>	Yes
— Send cycles	250 μs, 500 μs,1 ms; 2 ms, 4 ms (not in the case of IRT with "high flexibility" option)
— Updating time	250 µs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	,
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
FIXOT INCT TO DEVICE	
Services	
Services — PG/OP communication	Yes
Services  — PG/OP communication  — Routing	Yes
Services — PG/OP communication	
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode	Yes Yes; with loadable FBs, max. configurable connections: 16, max.
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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy	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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device	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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device,	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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.	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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory	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
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; 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
Services  — PG/OP communication  — Routing  — S7 communication  — Isochronous mode  — IRT  — PROFlenergy  — Shared device  — Number of IO Controllers with shared device, max.  Transfer memory	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
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.	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
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; 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
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; 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
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.  — User data per submodule, max.	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
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.  — User data per submodule, max.  PROFINET CBA	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
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.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission	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
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.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission	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
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.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication	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
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.  Submodules  — Number, max.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication  • Number of connections, max.	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 Yes Yes
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.  — User data per submodule, max.  PROFINET CBA  • acyclic transmission  • cyclic transmission  Open IE communication  • Number of connections, max.  • Local port numbers used at the system end	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 Yes 16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
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. — User data per submodule, max.  PROFINET CBA  • acyclic transmission • cyclic transmission • cyclic transmission  • Number of connections, max. • Local port numbers used at the system end • Keep-alive function, supported  Protocols  PROFIsafe	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 Yes 16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
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. — User data per submodule, max.  PROFINET CBA  • acyclic transmission • cyclic transmission • cyclic transmission  • Number of connections, max. • Local port numbers used at the system end • Keep-alive function, supported  Protocols	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 Yes Yes  16 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535 Yes

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

- Data length of all incoming interconnections, max.  - Data length of all outgoing interconnections, max.  - Data length of all outgoing interconnections, max.  - Data length of all outgoing interconnections profit and an advantage of the profit of the		
max. — Data length of all outgoing interconnections, max.  — Data length per connection, max.  — Data length per connection, max.  — Transmission frequency. Transmission interval.  — Number of incoming interconnections — Number of incoming interconnections — Data length of all incoming interconnections. — Data length of all outgoing interconnections. — Data length per connection, max.  — Data length per connection, max.  — Portal length per connection, max.  — Portal length per connection, max.  — Portal length per connection, max.  — Supported — Number of Hild variables, max. — 2000 — Data length of all Hild Variables, max. — 2000 — Data length of all Hild Variables, max. — 2000 — Data length of all Hild Variables, max. — Supported — Suppo	Number of outgoing interconnections	100
max.  — Data length per connection, max.  1 400 byte  performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header  — Transmission frequency. Transmission interval, min.  — Number of incoming interconnections  — Data length of all incoming interconnections.  — Data length of all incoming interconnections.  — Data length of all oudgoing interconnections.  — Data length of all oudgoing interconnections.  — Data length per connection, max.  — Data length of all oudgoing interconnections.  — Number of stations that can log on for HMI variables via PROFINET / acyclic / header  — Number of stations that can log on for HMI variables via PROFINET / acyclic / header  — Number of stations that can log on for HMI variables via PROFINET / acyclic / header  — Number of HMI variables  — Number of HMI variables  — Number of HMI variables  — Data length of all HMI variables, max.  — Soo ms  — Soo ms  — Part length of all HMI variables, max.  — Soo ms  — Soo ms  — Number of Indeed PROFIBUS devices  — Supported  — Number of Indeed PROFIBUS devices  — Oata length per connection, max.  — Soo ms  Number of nonnections  — overall  — adjustable for PG communication  — reserved for PG communication  — adjustable for PG communication, min.  — adjustable for PG communication  — adjustable for PG basic communication  — adjustable for ST communication  — adjustable for ST communication, min.  — adjustable for ST communication, max.  • usable for ST communication  — adjustable for ST communication, max.  • Usable for PG communication  — adjustable for ST communication  — adjustable		2 000 byte
performance data / PROFINET CBA / remote interconnections / with cyclic transfer / header — Transmission frequency: Transmission interval, min. — Number of oliqoning interconnections 200 — Data length of all incoming interconnections, 200 — Data length of all incoming interconnections, 200 — Data length per connection, max. — Data length per connection, max. — Seal length of all HMI variables via PROFINET / acyclic / header — Number of stations that can log on for HMI variables via PROFINET / acyclic / header — Number of HMI variables, max. — Seal length of all HMI variables, max. — Sea length of all HMI variables, max. — Sea length of all HMI variables, max. — Sea length per connection, max. — Sea length pe		2 000 byte
— Transmission frequency: Transmission interval, min. — Number of incoming interconnections 200 — Number of outgoing interconnections 200 — Data length of all contining interconnections, 2000 byte max. — Data length of all outgoing interconnections, 2000 byte max. — Data length of all outgoing interconnections, 2000 byte max. — Data length per connection, max. — Data length per connection, max. — Data length per connection, max. — Experimence data / PROFINET CBA / HMI variables via PROFINET / acyclic / header — Number of stations that can log on for HMI variables (PN OPC/IMap) — HMI variable updating 500 ms — Number of HMI variable with variables of pool byte performance data / PROFINET CBA / PROFIBUS proxy functionality / header — supported Yes — Supported Yes — Number of Intervention of the pool byte outperformance data / PROFIBUS devices 16 — Data length per connection, max. 240 byte: Slave-dependent  Number of connections  • overall • usable for PG communication 31 — reserved for PG communication, min. — adjustable for PC communication, min. — adjustable for ST basic communication, min. — adjustable for ST communication, min. — adjustable for S	<ul> <li>Data length per connection, max.</li> </ul>	1 400 byte
min. Number of incoming interconnections 200 Number of outgoing interconnections 200 Data length of all incoming interconnections, 200 Data length of all incoming interconnections, 2000 byte 2000	performance data / PROFINET CBA / remote interconne	ction / with cyclic transfer / header
		10 ms
Data length of all incoming interconnections, max.  Data length of all outgoing interconnections, max.  Data length of all outgoing interconnections, max.  Data length per connection, max.  Data length of all outgoing some per per per per per per per per per pe	<ul> <li>Number of incoming interconnections</li> </ul>	200
max.  — Data length of all outgoing interconnections, max.  — Data length per connection, max.  — Data length per connection, max.  — Data length per connection, max.  — Aumber of stations that can log on for HMI variables (PR OPC/Mbp)  — HMI variable updating — Number of HMI variables, max.  — Data length of all HMI variables, max.  — Data length of all HMI variables, max.  — Data length of all HMI variables, max.  — Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Stationary of all HMI variables, max.  — Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Overall  • Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Data length of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall  — Stationary of all HMI variables, max.  — Overall of all HMI variables of or pount of all HMI variables, max.  — Overall of all HMI variables, max.  — Overall of	<ul> <li>Number of outgoing interconnections</li> </ul>	200
max.  — Data length per connection, max.  — Data length per connection, max.  — Data length per connection, max.  — Number of stations that can log on for HMI  variables (PN OPC/Map)  — HMI variable updating  — Number of HMI variables  — Data length of all HMI variables, max.  — 2000  — Data length of all HMI variables, max.  — 2000  — Data length of all HMI variables, max.  — 2000  — Data length of all HMI variables, max.  — 2000  — Data length of all HMI variables, max.  — 2000  — Data length of all HMI variables, max.  — 2000  — Sapported  — supported  — supported  — Supported  — Sapported  —	· · · · · · · · · · · · · · · · · · ·	2 000 byte
performance data / PROFINET CBA / HMI variables via PROFINET / acyclic / header  Number of stations that can log on for HMI variables (PN OPC/Ix iMap  HMI variables (PN OPC/IMap)  HMI variables 200  Data length of all HMI variables 200  Data length of all HMI variables, max. 2 000 byte performance data / PROFINET CBA / PROFIBUS proxy functionality / header  supported  Number of Initived PROFIBUS devices 16  Data length per connection, max. 240 byte; Slave-dependent  Number of connections  overall 32  usable for PG communication 1  adjustable for PG communication 1  adjustable for PG communication, min. 1  adjustable for PG communication 1  adjustable for PG communication, min. 31  reserved for OP communication, min. 1  adjustable for PG communication, min. 30  reserved for ST basic communication 0  reserved for ST basic communication 10  adjustable for ST basic communication 10  adjustable for ST communication 10  adjustable for S		2 000 byte
- Number of stations that can log on for HMI variables (PR OPC/fixlpa)  - HMI variable updating - Number of HMI variables, max. 200 - Data length of all HMI variables, max. 200 byte  performance data / PROFINET CBA / PROFIBUS proxy functionality / header - supported - Number of linked PROFIBUS devices - Data length per connection, max. 240 byte; Slave-dependent  Number of connections  • overall • usable for PG communication - reserved for PG communication, min adjustable for PG communication, min adjustable for OP communication, min adjustable for S7 basic communication, min adjustable for S7 communication - reserved for S7 communication, max.  • usable for S7 communication - adjustable for S7 communication, min	- '	· ·
variables (PN OPC/MAp)  - 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. functionality / header  - 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 1  - reserved for PG communication, min. 1  - adjustable for PG communication, min. 1  - adjustable for PG communication, min. 1  - adjustable for OP communication 31  • reserved for OP communication, min. 1  - adjustable for OP communication, min. 1  - adjustable for OP communication, min. 1  - adjustable for SP basic communication, min. 1  - adjustable for SP basic communication, min. 1  - adjustable for SP basic communication, min. 0  - adjustable for SP basic communication, min. 0  - adjustable for SP basic communication, min. 0  - adjustable for SP communication 16  - reserved for SP communication 16  - reserved for SP communication 16  - reserved for SP communication 16  - adjustable for SP communication, min. 0  - adjustable f	performance data / PROFINET CBA / HMI variables via f	PROFINET / acyclic / header
- Number of HMI variables		3; 2x PN OPC/1x iMap
Data length of all HMI variables, max.  performance data / PROFIBUS CBA / PROFIBUS proxy functionality / header supported Number of linked PROFIBUS devices Data length per connection, max.  Data length per connection, max.    Vestable for PG communication   1	<ul> <li>HMI variable updating</li> </ul>	500 ms
performance data / PROFINET CBA / PROFIBUS proxy functionality / header  - supported - Number of inked PROFIBUS devices - Data length per connection, max.    Value of Connections   240 byte; Slave-dependent	<ul> <li>Number of HMI variables</li> </ul>	200
- supported - Number of linked PROFIBUS devices - Data length per connection, max.  Number of connections  • overall - usable for PG communication - reserved for PG communication, min adjustable for PG communication - reserved for OP communication - adjustable for PG communication - adjustable for OP communication - adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 communication - reserved for S7 communication - reserved for S7 communication, min adjustable for S7 communication - reserved for S7 communication - reserved for S7 communication - reserved for S7 communication, min adjustable for S7 communication - adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication - reserved for S7 communication, min adjustable for S7 communication - reserved for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication - reserved for S7 communication, min adjustable for S7 communication reserved for S7 commu	_	·
- Number of linked PROFIBUS devices - Data length per connection, max.  Number of connections  • overall • usable for PG communication - reserved for PG communication - adjustable for PG communication, min adjustable for PG communication, max.  • usable for PG communication - reserved for PG communication, max.  • usable for PG communication - reserved for OP communication - reserved for OP communication - adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 communication, max.  • total number of instances, max. • total number of instances, max.  • total number of login stations for message functions, max.  S7 message functions  Number of login stations for messages - Yes simultaneously active Alarm-S blocks, max.  Process diagnostic messages - Yes simultaneously active Alarm-S blocks, max.  Process diagnostic messages - Yes Number of breakpoints - 4  Status Dock - Yes; Up to 2 simultaneously - Siatus Jock - Yes - Number of breakpoints - 4  Status/control - Status/control variable - Variables - Number of variables, max of which status variables, max of which status variables, max.	performance data / PROFINET CBA / PROFIBUS proxy	functionality / header
Number of connections   32	— supported	
overall 32         usable for PG communication 31		
overall     ousable for PG communication		240 byte; Slave-dependent
usable for PG communication		
- reserved for PG communication, min adjustable for PG communication, min adjustable for PG communication, max.  • usable for OP communication - reserved for OP communication - adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 communication - adjustable 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. 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.  30  Test commissioning functions  Status block  Yes; Up to 2 simultaneously Single step Yes Number of breakpoints  4  Status/control  • Status/control variable • Variables Inputs, outputs, memory bits, DB, times, counters • Number of wariables, max.  - of which status variables, max.		
- adjustable for PG communication, min adjustable for PG communication, max.  • usable for OP communication - reserved for OP communication 1 - adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, max. 31 • usable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 communication - reserved for S7 communication - adjustable for S7 communication - adjustable for S7 communication - adjustable for S7 communication, min adjustable for S7 communication, max.  • total number of instances, max.  • total number of login stations for message functions, 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  simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  30		
- adjustable for PG communication, max.  • usable for OP communication  — reserved for OP communication  — adjustable for OP communication, min.  — adjustable for OP communication, min.  — adjustable for OP communication, max.  • usable for S7 basic communication  — adjustable for S7 basic communication  — adjustable for S7 basic communication, min.  — adjustable for S7 basic communication, max.  • usable for S7 communication  — adjustable for S7 communication, max.  • usable for S7 communication, max.  • total number of instances, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  30  31  1  1  1  1  1  1  1  1  1  1  1  1		
usable for OP communication  reserved for OP communication  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication  reserved for S7 basic communication  adjustable for S7 basic communication  adjustable for S7 basic communication, min.  adjustable for S7 basic communication, max.  usable for S7 communication  adjustable for S7 communication  reserved for S7 communication  adjustable for S7 communication  adjustable for S7 communication  adjustable for S7 communication, max.  total number of instances, max.  usable for routing  total number of instances, max.  total number of instances, max.  total number of instances, max.  at as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.  The search of login stations for message functions, max.  at as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.  The search of login stations for message functions, max.  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  Status/control  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  30  30  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  4  31  31	-	
reserved for OP communication adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  • usable for S7 communication reserved for S7 communication adjustable for S7 communication adjustable for S7 communication, min adjustable for S7 communication, max.  16 • total number of instances, max.  • usable for routing  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.  7 yes simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints Yes Number of breakpoints Status/control Status/control Status/control variable Variables Number of variables, max of which status variables, max of which status variables, max of which status variables, max.		
adjustable for OP communication, min adjustable for OP communication, max.  • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  • usable for S7 communication reserved for S7 communication adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, max adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, max stotal number of instances, max stotal number of instances in number of i		
- adjustable for OP communication, max.  • usable for S7 basic communication  - reserved for S7 basic communication  - adjustable for S7 basic communication, min.  - adjustable for S7 basic communication, max.  • usable for S7 communication  - adjustable for S7 communication, min.  - adjustable for S7 communication, max.  16  • total number of instances, max.  • 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 blocks, max.  7est commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  30  31		
usable for S7 basic communication  — reserved for S7 basic communication, min.  — adjustable for S7 basic communication, min.  — adjustable for S7 basic communication, max.  usable for S7 communication  — reserved for S7 communication  — adjustable for S7 communication  — adjustable for S7 communication  — adjustable for S7 communication, min.  — adjustable for S7 communication, max.  • total number of instances, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Status block  Yes  simultaneously active Alarm-S blocks, max.  Status block  Status block  Yes  Ves  Number of breakpoints  4  Status/control  • Status/control  • Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  30  0  16  0  16  0  16  0  16  16  16  1		
- reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  • usable for S7 communication - reserved for S7 communication - adjustable for S7 communication - adjustable for S7 communication - adjustable for S7 communication, min adjustable for S7 communication, max.  • total number of instances, max.  • usable for routing  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Status block Status block Single step  Number of breakpoints  Status/control  • Status/control  • Status/control  • Status/control  • Status/control variable • Variables • Number of variables, max.  - of which status variables, max.  30  10  10  10  10  10  10  10  10  10		
- adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  • usable for S7 communication - reserved for S7 communication 0 - adjustable for S7 communication, min adjustable for S7 communication, min 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. 14; X2 as PROFINET: 24 max.  S7 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  Status block Yes; Up to 2 simultaneously Single step Number of breakpoints 4  Status/control  • Status/control  • Status/control variable • Variables • Number of variables, max of which status variables, max. 30		
- adjustable for S7 basic communication, max.  • usable for S7 communication  - reserved for S7 communication  - adjustable for S7 communication, min.  - adjustable for S7 communication, max.  16  • total number of instances, max.  • 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.  Process diagnostic messages  Yes simultaneously active Alarm-S blocks, max.  7 yes simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously Single step  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  - of which status variables, max.  30  30		
usable for S7 communication         — reserved for S7 communication         — adjustable for S7 communication, min.         — adjustable for S7 communication, min.         — adjustable for S7 communication, max.         • total number of instances, max.         • usable for routing	•	
- reserved for S7 communication 0 adjustable for S7 communication, min. 0 adjustable for S7 communication, min. 0 adjustable for S7 communication, max. 16 total number of instances, max. 32	-	
- adjustable for S7 communication, min adjustable for S7 communication, max.  • total number of instances, max.  • 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.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block Single step Number of breakpoints  Status/control  • Status/control  • Status/control variable • Variables • Number of variables, max.  — of which status variables, max.  32  X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.  32  X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 24; X1 as DP slave (active): max. 24; X1 as DP master: max. 24; X1 as DP slave (active): max. 24; X1 as DP master: max. 24; X1 as DP slave (active): max. 24; X1 as DP master: max. 24; X1 as DP max. 24		
- adjustable for S7 communication, max.  • total number of instances, max.  • 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.  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Number of breakpoints  4  Status/control  • Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  32; Depending on the configured connections for PG/OP and S7 basic communication  Yes  100  32; Depending on the configured connections for PG/OP and S7 basic communication  Yes  100  100  100  100  100  100  100  1		
<ul> <li>total number of instances, max.</li> <li>usable for routing</li> <li>X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>Process diagnostic messages</li> <li>Yes</li> <li>simultaneously active Alarm-S blocks, max.</li> <li>Test commissioning functions</li> <li>Status block</li> <li>Yes; Up to 2 simultaneously</li> <li>Single step</li> <li>Yes</li> <li>Number of breakpoints</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>Of which status variables, max.</li> <li>30</li> <li>30</li> <li>30</li> </ul>		
<ul> <li>usable for routing</li> <li>X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.</li> <li>Number of login stations for message functions, max.</li> <li>Process diagnostic messages</li> <li>yes</li> <li>simultaneously active Alarm-S blocks, max.</li> <li>Test commissioning functions</li> <li>Status block</li> <li>Yes; Up to 2 simultaneously</li> <li>Single step</li> <li>Number of breakpoints</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>Of which status variables, max.</li> <li>30</li> </ul>	•	
S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Status block Single step Number of breakpoints  Status/control  Status/control  Status/control  Ves Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.  30  Yes Inputs, outputs, memory bits, DB, times, counters  30  30  Yes  Number of variables, max.  30  A  Of which status variables, max.  30  30  31  32; Depending on the configured connections for PG/OP and S7 basic communication  Yes  Yes  Yes  Inputs, outputs, memory bits, DB, times, counters  30  30  30  30		
Number of login stations for message functions, max.  22; Depending on the configured connections for PG/OP and S7 basic communication  Process diagnostic messages  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  • Variables  • Number of variables, max.  — of which status variables, max.  30  32; Depending on the configured connections for PG/OP and S7 basic communication  32; Depending on the configured connections for PG/OP and S7 basic communication  300  Test commissioning functions  4  Yes; Up to 2 simultaneously  Yes  Number of breakpoints  4  Status/control  • Status/control  of variables, max.  30  30		
communication  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block  Yes; Up to 2 simultaneously  Single step  Yes  Number of breakpoints  4  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  30  Communication  Yes  Iputs, outputs, memory bits, DB, times, counters  30  30		
simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control  • Status/control variable • Variables • Number of variables, max of which status variables, max.  300  Yes; Up to 2 simultaneously Yes  In puts, outputs, memory bits, DB, times, counters 300  300	Number of login stations for message functions, max.	
Test commissioning functions  Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4  Status/control  • Status/control variable • Variables • Number of variables, max of which status variables, max.  30  Yes; Up to 2 simultaneously Yes  Inputs, outputs, memory bits, DB, times, counters		Yes
Status block  Single step  Yes  Number of breakpoints  4  Status/control  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  30  Yes; Up to 2 simultaneously  Yes  Inputs, outputs, memory bits, DB, times, counters  30  30	simultaneously active Alarm-S blocks, max.	300
Single step  Number of breakpoints  4  Status/control  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  30  30	Test commissioning functions	
Number of breakpoints  Status/control  Status/control variable  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  4  Yes  Inputs, outputs, memory bits, DB, times, counters  30  30	Status block	Yes; Up to 2 simultaneously
Status/control  Status/control variable  Variables  Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.  of which status variables, max.  30	Single step	Yes
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> </ul> Yes <ul> <li>Inputs, outputs, memory bits, DB, times, counters</li> </ul> 30 30 30 30	Number of breakpoints	4
<ul> <li>Variables</li> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> <li>Inputs, outputs, memory bits, DB, times, counters</li> <li>30</li> <li>30</li> </ul>	Status/control	
<ul> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> <li>30</li> <li>30</li> </ul>	<ul> <li>Status/control variable</li> </ul>	Yes
— of which status variables, max. 30	<ul><li>Variables</li></ul>	Inputs, outputs, memory bits, DB, times, counters
	<ul> <li>Number of variables, max.</li> </ul>	30
— of which control variables, max.	<ul><li>of which status variables, max.</li></ul>	30
· · · · · · · · · · · · · · · · · · ·	<ul><li>— of which control variables, max.</li></ul>	14

Egreing	
Forcing	Yes
• Forcing	
• Forcing, variables	Inputs, outputs
Number of variables, max.  Diagnostic buffer.	10
Diagnostic buffer	Voc
• 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
<ul><li>System functions (SFC)</li></ul>	see instruction list
<ul> <li>System function blocks (SFB)</li> </ul>	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	
	240 a
Weight, approx.	340 g

last modified: 8/24/2021 🖸