**Data sheet** 

## 6AG1315-2EH14-7AB0



SIPLUS S7-300 CPU 315-2PN/DP based on 6ES7315-2EH14-0AB0 with conformal coating, -25...+70 °C, central processing unit with 384 KB work memory, 1st interface MPI/DP 12 Mbps, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

General information	
Product function	
<ul><li>Isochronous mode</li></ul>	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	
<ul><li>integrated</li></ul>	384 kbyte
• expandable	No
Load memory	
<ul><li>Plug-in (MMC)</li></ul>	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.05 µs
for word operations, typ.	0.09 µs
for fixed point arithmetic, typ.	0.12 µs
for floating point arithmetic, typ.	0.45 µs
CPU-blocks	

Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	be reduced by the MINIC dised.
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	O F No.
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	o i nayto
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	o i nayto
• 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
	1; OB 100
<ul><li>Number of startup OBs</li><li>Number of asynchronous error OBs</li></ul>	
<ul> <li>Number of asynchronous error OBs</li> <li>Number of synchronous error OBs</li> </ul>	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
Nesting depth	2; OB 121, 122
- · ·	16
<ul><li>per priority class</li><li>additional within an error OB</li></ul>	4
	4
Counters, timers and their retentivity	
S7 counter	0.50
• Number	256
Retentivity	V
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
<ul><li>present</li></ul>	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
<ul> <li>Type</li> </ul>	SFB
<ul><li>Number</li></ul>	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
• Size, max.	2 048 byte

D	V ND 0 / ND 0 0 / F
Retentivity available	Yes; MB 0 to MB 2 047
Retentivity preset	MB 0 to MB 15
Number of clock memories  Data blocks	8; 1 memory byte
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity adjustable     Retentivity preset	Yes
Local data	165
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	· · · · · · · · · · · · · · · · · ·
I/O address area	
• Inputs	2 048 byte
Outputs	2 048 byte
of which distributed	,
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
• Inputs	2 048 byte
<ul><li>Outputs</li></ul>	2 048 byte
<ul> <li>Inputs, adjustable</li> </ul>	2 048 byte
<ul> <li>Outputs, adjustable</li> </ul>	2 048 byte
<ul><li>Inputs, default</li></ul>	128 byte
Outputs, default	128 byte
Subprocess images	
<ul> <li>Number of subprocess images, max.</li> </ul>	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
Digital channels	byics
• Inputs	16 384
— of which central	1 024
<ul><li>Outputs</li></ul>	16 384
— of which central	1 024
Analog channels	
• Inputs	1 024
<ul><li>of which central</li></ul>	256
Outputs	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8 10
• CP, LAN	10
• Racks, max.	4
Modules per rack, max.	8
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup	the clock continues at the time of day it had when power was switched
period	off
Operating hours counter	
• Number	1
<ul><li>Number/Number range</li><li>Range of values</li></ul>	0 0 to 2^31 hours (when using SFC 101)

<ul><li>Granularity</li></ul>	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	W.
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
<ul><li>in AS, master</li><li>in AS, slave</li></ul>	Yes Yes
on Ethernet via NTP	Yes; As client
Digital inputs	res, As circlit
Number of digital inputs	0
	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
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
MPI	40 ML 1/-
Transmission rate, max.	12 Mbit/s
Services	V
— PG/OP communication	Yes
— Routing	Yes
Global data communication     S7 basic communication	Yes Yes
S7 basic communication  S7 communication	Yes
	No; but via CP and loadable FB
— S7 communication, as client	Yes
— S7 communication, as server PROFIBUS DP master	165
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	1LT
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
S7 basic communication	Yes; I blocks only
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on
	PROFIBUS DP or PROFINET IO

— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
<ul> <li>Number of DP slaves that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	,
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	244 byto
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	Van
— 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
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
to the server	
— Outputs	244 byte
•	
— Outputs	
— Outputs  2. Interface	PROFINET
— Outputs  2. Interface Interface type Isolated	PROFINET Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate	PROFINET Yes Yes; 10/100 Mbit/s
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation	PROFINET Yes Yes; 10/100 Mbit/s Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported	PROFINET Yes Yes; 10/100 Mbit/s Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet)	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols • MPI	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes No
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols • MPI • PROFINET IO Controller	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Also simultaneously with IO-Device functionality
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols • MPI • PROFINET IO Controller • PROFINET IO Device	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET CBA	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  Y
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET CBA	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  Y
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  Y
— Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes  Yes  Yes
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No No Yes; Via TCP/IP, ISO on TCP, and UDP
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • 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	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  Y
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • 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 Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  Y
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Web server • Media redundancy  PROFINET IO Controller	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes  Yes  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
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max. Services	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  No  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services - PG/OP communication	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  10/100 Mbit/s  Yes  Yes  Yes  Yes  Yes  10/100 Mbit/s  Yes  Yes  Yes  Yes  100 Mbit/s  Yes
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • 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  - PG/OP communication - Routing	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes  Yes  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  Yes Yes
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • Number of ports • integrated switch  Protocols  • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Web server • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services - PG/OP communication	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes  Yes  Yes  Yes  10/100 Mbit/s  Yes  Yes  Yes  Yes  Yes  10/100 Mbit/s  Yes  Yes  Yes  Yes  100 Mbit/s  Yes  100 Mbit/s
- Outputs  2. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types  • RJ 45 (Ethernet) • 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  - PG/OP communication - Routing	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes  Yes  Yes  No Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality Yes No No No Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes Yes  Yes Yes Yes Yes Yes Yes Ye

	PROFIBUS DP or PROFINET IO
— IRT	Yes
<ul> <li>Shared device</li> </ul>	Yes
<ul> <li>Prioritized startup</li> </ul>	Yes
<ul> <li>Number of IO devices with prioritized startup, max.</li> </ul>	32
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128
<ul> <li>Of which IO devices with IRT, max.</li> </ul>	64
— of which in line, max.	64
<ul> <li>Number of IO Devices with IRT and the option "high flexibility"</li> </ul>	128
— of which in line, max.	61
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	128
— of which in line, max.	128
<ul> <li>Activation/deactivation of IO Devices</li> </ul>	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>IO Devices changing during operation (partner ports), supported</li> </ul>	Yes
<ul> <li>Number of IO Devices per tool, max.</li> </ul>	8
<ul> <li>Device replacement without swap medium</li> </ul>	Yes
— Send cycles	$250~\mu s, 500~\mu s, 1~ms; 2~ms, 4~ms$ (not in the case of IRT with "high flexibility" option)
— Updating time	250 μs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device Services	
— PG/OP communication	Yes
— PG/OF communication  — Routing	Yes
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device
— Shared device	Yes
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	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
Submodules	
— Number, max.	64
— User data per submodule, max.	1 024 byte
PROFINET CBA	V
acyclic transmission	Yes
cyclic transmission  Open IF communication	Yes
Open IE communication	0
Number of connections, max.      Local port numbers used at the system and	8
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	
PROFIsafe	No
Redundancy mode	
NA P. I I	
Media redundancy	200 may PROFINET MRR
Media redundancy  — Switchover time on line break, typ.  — Number of stations in the ring, max.	200 ms; PROFINET MRP 50

Open IE communication	
TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
— Number of connections, max.	8
Data length for connection type 01H, max.	1 460 byte
Data length for connection type 011, max.  — Data length for connection type 11H, max.	32 768 byte
several passive connections per port,	Yes
— several passive conflections per port, supported	Tes
• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
— Number of connections, max.	8
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	8
— Data length, max.	1 472 byte
Web server	2 3/10
• supported	Yes
User-defined websites	Yes
Number of HTTP clients	5
communication functions / header	·
PG/OP communication	Yes
Data record routing  Global data communication	Yes
	Vos
supported     Number of CD leave may	Yes
Number of GD loops, max.     Number of GD pockets may.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	V
• supported	Yes
User data per job, max.	76 byte
<ul> <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)
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 of	communication load) / header
<ul> <li>Setpoint for the CPU communication load</li> </ul>	50 %
<ul> <li>number of remote connection partners / with PROFINET CBA</li> </ul>	32
<ul> <li>number of technological functions / with PROFINET CBA / for master or slave</li> </ul>	30
<ul> <li>number of connections / with PROFINET CBA / for master or slave / total</li> </ul>	1 000
<ul> <li>data volume / of the input variables / with PROFINET CBA / for master or slave</li> </ul>	4 000 byte
<ul> <li>data volume / of the output variables / with PROFINET CBA / for master or slave</li> </ul>	4 000 byte
<ul> <li>number of internal and PROFIBUS interconnections / with PROFINET CBA / maximum</li> </ul>	500
<ul> <li>data volume / of internal and PROFIBUS interconnections / with PROFINET CBA / for master or slave</li> </ul>	4 000 byte
data volume / with PROFINET CBA / per connection / maximum	1 400 byte
performance data / PROFINET CBA / remote interconne	
— update time / of the remote interconnections /	500 ms

in the case of acyclic transmission / with PROFINET CBA	
<ul> <li>number of remote connections to input variables / in the case of acyclic transmission / with PROFINET CBA / maximum</li> </ul>	100
<ul> <li>number of remote connections to output variables / in the case of acyclic transmission / with PROFINET CBA / maximum</li> </ul>	100
<ul> <li>data volume / as user data for remote interconnections with input variables / in the case of acyclic transmission / with PROFINET CBA</li> </ul>	2 000 byte
<ul> <li>data volume / as user data for remote interconnections with output variables / in the case of acyclic transmission / with PROFINET CBA</li> </ul>	2 000 byte
<ul> <li>data volume / as user data for remote interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum</li> </ul>	1 400 byte
performance data / PROFINET CBA / remote interconnection	ction / with cyclic transfer / header
update time / of the remote interconnections / with cyclical transfer / with PROFINET CBA	10 ms
<ul> <li>number of remote connections to input variables / with PROFINET CBA / with cyclic transfer / maximum</li> </ul>	200
<ul> <li>number of remote connections to output variables / with cyclical transfer / with PROFINET CBA / maximum</li> </ul>	200
<ul> <li>data volume / as user data for remote interconnections with input variables / with cyclical transfer / with PROFINET CBA / maximum</li> </ul>	2 000 byte
<ul> <li>data volume / as user data for remote interconnections with output variables / with cyclical transfer / with PROFINET CBA / maximum</li> </ul>	2 000 byte
<ul> <li>data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum</li> </ul>	450 byte
performance data / PROFINET CBA / HMI variables via I	PROFINET / acyclic / header
<ul> <li>number of connectable HMI stations / for HMI variables / in the case of acyclic transmission / with PROFINET CBA</li> </ul>	3; 2x PN OPC/1x iMap
<ul> <li>update time / of the HMI variables / in the case of acyclic transmission / with PROFINET CBA</li> </ul>	500 ms
<ul> <li>number of HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum</li> </ul>	200
<ul> <li>data volume / as user data for HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum</li> </ul>	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy	functionality / header
— product function / with PROFINET CBA / PROFIBUS proxy functionality	Yes
<ul> <li>number of coupled PROFIBUS devices / with PROFIBUS functionality</li> </ul>	16
<ul> <li>data volume / with PROFIBUS proxy functionality / with PROFINET CBA / per connection / maximum</li> </ul>	240 byte; Slave-dependent
Number of connections	
overall	16
usable for PG communication	15
usable for PG communication      reserved for PG communication	1
	1
adjustable for PG communication, min.	
— adjustable for PG communication, max.	15
usable for OP communication	15
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	15
<ul> <li>usable for S7 basic communication</li> </ul>	14

recentled for C7 basis communication	٥
— reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	14
usable for S7 communication	14
<ul> <li>reserved for S7 communication</li> </ul>	0
<ul> <li>adjustable for S7 communication, min.</li> </ul>	0
<ul> <li>adjustable for S7 communication, max.</li> </ul>	14
<ul><li>total number of instances, max.</li></ul>	32
<ul><li>usable for routing</li></ul>	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave
	(active): max. 14; X2 as PROFINET: 24 max.
S7 message functions	
Number of login stations for message functions, max.	16; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
of which status variables, max.	30
of which status variables, max.  — of which control variables, max.	14
·	14
Forcing	Vaa
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
<ul> <li>Number of entries, max.</li> </ul>	500
— adjustable	No
<ul><li>— of which powerfail-proof</li></ul>	100; Only the last 100 entries are retained
<ul> <li>Number of entries readable in RUN, max.</li> </ul>	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
• can be read out	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
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 @ UL/cUL, ATEX and FM use
	70 0, - Illiax, 00 0 W OL/COL, ATEX allu FIVI USE
Ambient temperature during storage/transportation	40 °C
• min.	-40 °C
Max.  Altitude during expertion relating to one level.	70 °C
Altitude during operation relating to sea level	5.000
Installation altitude above sea level, max.	5 000 m
<ul> <li>Ambient air temperature-barometric pressure- altitude</li> </ul>	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	(1111ax -20 11) at 050 111 a 540 111 a (+5 500 111 +5 000 111)
Relative numbers	

<ul> <li>With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems	
<ul> <li>to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul> <li>to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
<ul> <li>to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 or request
<ul> <li>to chemically active substances according to EN 60721-3-6</li> </ul>	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	
<ul> <li>Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04</li> </ul>	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	
<ul> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
onfiguration / 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
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	Yes
Know-how protection  • User program protection/password protection	Yes Yes
Know-how protection	
Know-how protection  User program protection/password protection  Block encryption	Yes
Know-how protection  User program protection/password protection  Block encryption	Yes
Know-how protection  User program protection/password protection Block encryption imensions	Yes Yes; With S7 block Privacy
Know-how protection  User program protection/password protection Block encryption imensions Width Height	Yes Yes; With S7 block Privacy
Know-how protection  • User program protection/password protection  • Block encryption  imensions  Width  Height  Depth	Yes Yes; With S7 block Privacy  40 mm 125 mm
Know-how protection  User program protection/password protection Block encryption imensions Width	Yes Yes; With S7 block Privacy  40 mm 125 mm