Data sheet 6ES7315-7TJ10-0AB0



SIMATIC S7-300, CPU 315T-3 PN/DP, Central processing unit for PLC and technology tasks, 384 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP (drive), 3rd interface Ethernet PROFINET with 2-port switch, Integr. I/O for technology, Front connector (1x 40-pole) and Micro Memory Card min. 8 MB required

General information	
HW functional status	01
Firmware version	CPU: V3.2; integrated technology V4.1.5
Product function	
 Isochronous mode 	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
Programming package	STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Load voltage L+	
Rated value (DC)	24 V
 Reverse polarity protection 	Yes
Digital outputs	
— Rated value (DC)	24 V; (2L+)
 Reverse polarity protection 	No; (2L+)
Input current	
Current consumption (rated value)	1 050 mA
Current consumption (in no-load operation), typ.	230 mA
Inrush current, typ.	6.5 A
l²t	1 A ² ·s
Power loss	
Power loss, typ.	7.5 W
Memory	
Work memory	
integrated	384 kbyte
expandable	No
Load memory	
Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 a
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 energtions two	0.00 μα
for word operations, typ. for fixed point arithmetic, typ.	0.09 µs 0.12 µs
for floating point arithmetic, typ.	0.45 µs
CPU-blocks	υ.το μο
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can
	be reduced by the MMC used.
DB	
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC ● Number, max.	1.024: Number range: 0 to 7000
• Size, max.	1 024; Number range: 0 to 7999 64 kbyte
OB	OH RUYLO
Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
 Number of delay alarm OBs 	2; OB 20, 21
 Number of cyclic interrupt OBs 	4; OB 32, 33, 34, 35
 Number of process alarm OBs 	1; OB 40
 Number of DPV1 alarm OBs 	3; OB 55, 56, 57
 Number of isochronous mode OBs 	1; OB 61 - isochronous mode is possible either on DP or PROFINET IO
Number of technology synchronous alarm OBs	(not simultaneously) 1; OB 65
Number of technology synchronous alarm OBS Number of startup OBs	1; OB 100
Number of asynchronous error OBs	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	_, -, ,
per priority class	16
 additional within an error OB 	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset Counting range	Z 0 to Z 7
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	10 ms
— lower limit — upper limit	9 990 s
— upper limit	0 000 0
• present	Yes
In the second se	
Type	SFB
TypeNumber	SFB Unlimited (limited only by RAM capacity)

Potentive data area (incl. timers, counters, flags), may	128 khyto
Retentive data area (incl. timers, counters, flags), max. Flag	128 kbyte
	2.040 hyto
Size, max. Petentivity available	2 048 byte
Retentivity available Retentivity propert	Yes; MB 0 to MB 2 047 MB 0 to MB 15
Retentivity preset	
Number of clock memories	8; 1 memory byte
Data blocks	Vi
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	00.700
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
 Outputs 	2 048 byte
 Inputs, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Default addresses of the integrated channels	
— Digital inputs	66
— Digital outputs	66
Subprocess images	
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600
	bytes
Digital channels	
Inputs	16 384
— of which central	256
Outputs	16 384
— of which central	256
Analog channels	
• Inputs	1 024
— of which central	64
Outputs	1 024
— of which central	64
Hardware configuration	
Number of expansion units, max.	0
Number of DP masters	
integrated	2; 1 DP and 1 DP (drive)
• via CP	2; for DP
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	8
Rack	
• Racks, max.	1
Modules per rack, max.	8
Time of day	
Clock	
	Voc
Hardware clock (real-time) retentive and symphronizable	Yes
retentive and synchronizable Reskup time	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max. Deviation of the clock fellowing POWER ON	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON Debaying of the clock following power of backure.	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
Operating hours counter • Number	1
♥ INUITIDEI	

- Ni mele ex/Ni mele = 1 = 1 = 1	0
Number/Number range Dange of values	0 0 to 2/24 hours (when using SEC 101)
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	V
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes; Only time-of-day slave
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	Yes; As client
Digital inputs	
Number of digital inputs	4
 of which inputs usable for technological functions 	4
Input characteristic curve in accordance with IEC 61131,	Yes
type 1	
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	4
— up to 60 °C, max.	4
vertical installation	4
— up to 40 °C, max.	4
Input voltage	24.1/
Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	7 ^
• for signal "1", typ.	7 mA
Input delay (for rated value of input voltage)	
for technological functions	40 up Turing
— at "0" to "1", max.	10 µs; Typical
— at "1" to "0", max.	10 μs; Typical
Cable length	1 000 m
shielded, max.	1 000 111
Digital outputs	
Number of digital outputs	8
 of which high-speed outputs 	8
Functions	for technology functions, e.g. high-speed cam switch signals
Short-circuit protection	Yes
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	48 V
Controlling a digital input	No
Switching capacity of the outputs	EW.
• on lamp load, max.	5 W
Load resistance range	40.0
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	2 \/: (2 ±)
• for signal "0", max.	3 V; (2L+) Rated voltage 2.5 V
for signal "1", min. Output current	Rated voltage -2.5 V
·	0.5 A
• for signal "1" rated value	
 for signal "1" permissible range for 0 to 60 °C, min. for signal "1" permissible range for 0 to 60 °C, max. 	5 mA 0.6 A
	0.5 A 0.3 mA
for signal "0" residual current, max. Parallel puttobing of two outputs	U.J IIIA
Parallel switching of two outputs	
for uprating	No
• for redundant control of a load	No No
for redundant control of a load Switching frequency	No No
Switching frequency	No
Switching frequency • with resistive load, max.	No 100 Hz
Switching frequency	No

Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	3 A
all other mounting positions	
— up to 40 °C, max.	4 A
Integrated high-speed cams	
Switching accuracy (+/-)	70 μs
Cable length	
• shielded, max.	1 000 m
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Encoder	
Connectable encoders	N.
2-wire sensor	No
Interfaces	
Number of industrial Ethernet interfaces	1
Number of PROFINET interfaces	1
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	200 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	Yes
S7 basic communication	Yes
— S7 communication	Yes
— S7 communication — S7 communication, as client	No: but via CP and loadable FB
— S7 communication, as client — S7 communication, as server	Yes
PROFIBUS DP master	1.00
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	.2.
— PG/OP communication	Yes
— Routing	Yes
Routing Global data communication	No
Global data communication S7 basic communication	
— S7 basic communication — S7 communication	Yes; I blocks only Yes
	Yes No
— S7 communication, as client	Yes
— S7 communication, as server	
— Equidistance	Yes
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— SYNC/FREEZE	Yes
— Activation/deactivation of DP slaves	Yes
Activation/deactivation of DP slaves Number of DP slaves that can be	8
Number of DP slaves that can be simultaneously activated/deactivated, max.	· ·
Direct data exchange (slave-to-slave)	Yes; as subscriber
communication)	

DD1/4	V
— DPV1	Yes
Address area	Q lybyta
— Inputs, max.— Outputs, max.	2 kbyte 2 kbyte
User data per DP slave	2 kDyte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	Z++ 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	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
 Global data communication 	No
 S7 basic communication 	No
— S7 communication	Yes
 S7 communication, as client 	No
 S7 communication, as server 	Yes; Connection configured on one side only
Direct data exchange (slave-to-slave)	Yes
communication)	N-
— DPV1	No
Transfer memory	244 byte
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	V.
• RS 485	Yes
Output current of the interface, max.	200 mA
Duntanala	
Protocols	No
● MPI	No You: DR/DRIVE) Magter
MPI PROFIBUS DP master	Yes; DP(DRIVE)-Master
MPIPROFIBUS DP masterPROFIBUS DP slave	Yes; DP(DRIVE)-Master No
 MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection 	Yes; DP(DRIVE)-Master
 MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master 	Yes; DP(DRIVE)-Master No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s
 MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. 	Yes; DP(DRIVE)-Master No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — Equidistance	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No Yes
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — Equidistance — Isochronous mode	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No No No Yes Yes
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — Equidistance — Isochronous mode — SYNC/FREEZE	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No Yes Yes No Yes
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No Yes Yes No Yes
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — DPV1 Address area — Inputs, max. — Outputs, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No No Yes Yes No Yes No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — DPV1 Address area — Inputs, max. — Outputs, max. User data per DP slave	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No Yes Yes No Yes No 1 024 byte 1 024 byte
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. User data per DP slave Inputs, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No Yes Yes No Yes No 1 024 byte 1 024 byte
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. Outputs, max. Outputs, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No No Yes Yes No Yes No 1 024 byte 1 024 byte
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. PROFIBUS DP slave	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No Yes Yes Yes No Yes No 1 024 byte 1 024 byte 244 byte 244 byte
 MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. PROFIBUS DP slave GSD file 	Yes; DP(DRIVE)-Master No No No 12 Mbit/s 64 No No No No No No No Yes Yes Yes No Yes No 1 024 byte 1 024 byte 244 byte 244 byte http://support.automation.siemens.com in Product Support area
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. Outputs, max. PROFIBUS DP slave GSD file Transmission rate, max.	Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No No No Yes Yes Yes No Yes No 1 024 byte 1 024 byte 244 byte 244 byte
 MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. PROFIBUS DP slave GSD file 	Yes; DP(DRIVE)-Master No No No 12 Mbit/s 64 No No No No No No No Yes Yes Yes No Yes No 1 024 byte 1 024 byte 244 byte 244 byte http://support.automation.siemens.com in Product Support area
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. Outputs, max. PROFIBUS DP slave GSD file Transmission rate, max. Interface Interfa	Yes; DP(DRIVE)-Master No No No 12 Mbit/s 64 No No No No No No No Yes Yes Yes No Yes No 1 024 byte 1 024 byte 244 byte 244 byte http://support.automation.siemens.com in Product Support area
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 Address area Inputs, max. Outputs, max. User data per DP slave Inputs, max. POITBUS DP slave GSD file Transmission rate, max.	Yes; DP(DRIVE)-Master No No No 12 Mbit/s 64 No No No No No No No Ves Yes Yes No 1 024 byte 1 024 byte 244 byte 244 byte http://support.automation.siemens.com in Product Support area 12 Mbit/s

Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	V
• RJ 45 (Ethernet)	Yes
Number of ports integrated quiteb	2 Yes
integrated switch Protocols	res
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFIBUS DP master	No
PROFIBUS DP slave	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max.
	number of instances: 32
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— Shared device	Yes
Prioritized startup	Yes
Number of IO devices with prioritized startup,	32
max.	<u> </u>
 Number of connectable IO Devices, max. 	128
 Of which IO devices with IRT, max. 	64
— of which in line, max.	64
 Number of connectable IO Devices for RT, 	128
max.	
— of which in line, max.	128
 Activation/deactivation of IO Devices 	Yes
Number of IO Devices that can be simultaneously activated (deagtivated may).	8
simultaneously activated/deactivated, max. — IO Devices changing during operation (partner	Yes
ports), supported	165
Number of IO Devices per tool, max.	8
Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
— 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	V
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	No
— IST	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB
	for I-Device
— Shared device	Yes
 Number of IO Controllers with shared device, 	2
max.	
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
•	

- Number communication - Number of connections, max. - Local port numbers used at the system end - Keep alive function, supported - Keep alive function, supported - Protocols - Seminarization in the fing, max - Seminarization - Corp Number of stations in the ring, max - Number of connections, max. - Data length for connection type 11H, max. - Several passive connections pye 11H, max. - Several passive connections pye 11H, max. - Several passive connections pye 11H, max. - Several passive connections, max. - Data length for connections pye 11H, max. - Several passive connections, max. - Data length for connections pye 11H, max. - Several passive connections, max. - Data length for connections pye 11H, max. - Several passive connections, max. - Data length for connections, max. - Data length for connections and pyerial pyeri	AL .	
Quantification Number of connections, max.	— Number, max.	64
Number of connections, max. Local port numbers used at the system end No. Rep-palive function, supported PROFisate Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of storions in the ring, max. Description of connections, max. — Number of connections, max. — Data length for connection type 11H, max. — several passive connections per port, aupported No. Number of connections, max. — Data length for connections per port, aupported No. Number of connections, max. — Data length for connections, max. — Data length max Number of connections, max. — Data length, max — Passive of the passive	·	1 024 byte
No. Coal port numbers used at the system end No. Resp-alive function, supported Yes Protocols PROFileste Redundancy mode Media redundancy — Switchover firm on line break, typ. — Number of stations in the ring, max. — Data length for connections, max. — Data length for connections per port. — Switchover apassive connections per port. — Switchover of connections, max. — Data length, max. — Switchover of connections, max. — Data length, max. — Web eaver — supported — Supported — Switchover firm of the properties of the switchover firm of the properties of the switchover firm of t	•	
66532, 66533, 65534, 65535 Yes Protocols PROFiliste No No Redundancy mode Media redundancy Switchover time on line break, typ. 200 ms; PROFINET MRP 50 50 50 50 50 50 50 5		
PROFisale PROFisale PROFisale Redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. — swertal passive connections per port, supported — ISO-on-TC(RFC1006) — Number of connections, max. — Data length for connection type 01H, max. — but length for connection type 01H, max. — but length for connection type 01H, max. — swertal passive connections per port, supported — ISO-on-TC(RFC1006) — Number of connections, max. — Data length, max. — Post length, max. — Data length, max. — Post length, max. — Post length, max. — Post length, max. — Supported — User-defined websites — User-defined websites — User-defined websites — User-defined of Diops, max. — Supported — User data per job, max. — Size of GD packets, rearwither, max. — Size of GD packets, max. — Size of GD packets, rearwither, max. — Size of GD packe	 Local port numbers used at the system end 	
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several passive connections per port, supported • ISO-on-TCP (RFC1006) Number of connections, max. Data length, max. • UDP Number of connections, max. Data length, max. Star length len		•
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- Number of connections, max. 1 472 byte - Data length, max. 1 472 byte - Supported Yes - User-defined websites Yes - Number of HTTP clients 5 - Summunication functions / header PG/OP communication		Yes; via integrated PROFINET interface and loadable FBs
- Data length, max. 1472 byte Web server * supported • User-defined websites 7es • Number of HTTP clients 5 **Communication functions / header PG/OP communication • supported • Number of BD packets, max. 8 • Number of BD packets, receiver, max. 8 • Number of BD packets, receiver, max. 22 byte Size of GD packet, max. 22 byte **Size of GD packet (of which consistent), max. 76 byte • User data per job (of which consistent), max. 76 byte • Susported • Susported • User data per job (of which consistent), max. 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) **ST basic communication • supported • User data per job, max. 76 byte • as server • as client • 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) **St basic communication • supported • 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) **St compatible communication • supported • 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) **St compatible communication • supported • usable for PG communication, min. - adjustable for PG communication, min. - adjustable for PG communication, min. - adjustable for PG communication, min. - reserved for OP communication • usable for OP communication - reserved for OP communication 15 - reserved for OP communication 15 - reserved for OP communication 15	 Number of connections, max. 	
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— reserved for OP communication 1		
— adjustable for OP communication, min.		
	 adjustable for OP communication, min. 	1

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 adjustable for OP communication, max. 	15
 usable for S7 basic communication 	14
 reserved for S7 basic communication 	0
 adjustable for S7 basic communication, min. 	0
 adjustable for S7 basic communication, max. 	14
 usable for S7 communication 	14
 reserved for S7 communication 	0
 adjustable for S7 communication, min. 	0
— adjustable for S7 communication, max.	14
total number of instances, max.	32
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave
- doddio ioi iodanig	(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
rumber of login stations for message functions, max.	communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
	Vec. I In to 2 simultaneously
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4; without continuation
Status/control	V
Status/control variable	Yes
• Variables	Inputs, outputs, memory bits, DB, times, counters
 Number of variables, max. 	30
of which status variables, max.	30
— of which control variables, max.	14
Forcing	
Forcing	Yes
 Forcing, variables 	Inputs, outputs
 Number of variables, max. 	10
Diagnostic buffer	
present	Yes
 Number of entries, max. 	500
— adjustable	No
 of which powerfail-proof 	100; Only the last 100 entries are retained
 Number of entries readable in RUN, max. 	499
• Number of chines readable in Nort, max.	400
· · · · · · · · · · · · · · · · · · ·	
— adjustable	Yes; From 10 to 499
· · · · · · · · · · · · · · · · · · ·	Yes; From 10 to 499
— adjustable — preset	Yes; From 10 to 499
— adjustable — preset Service data • can be read out	Yes; From 10 to 499 10
 — adjustable — preset Service data • can be read out Interrupts/diagnostics/status information 	Yes; From 10 to 499 10 Yes
— adjustable — preset Service data	Yes; From 10 to 499 10 Yes No
— adjustable — preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function	Yes; From 10 to 499 10 Yes
— adjustable — preset Service data	Yes; From 10 to 499 10 Yes No No
— adjustable — preset Service data	Yes; From 10 to 499 10 Yes No No No
 — adjustable — preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) 	Yes; From 10 to 499 10 Yes No No
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation	Yes; From 10 to 499 10 Yes No No No
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs	Yes; From 10 to 499 10 Yes No No Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus	Yes; From 10 to 499 10 Yes No No No
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs	Yes; From 10 to 499 10 Yes No No Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus	Yes; From 10 to 499 10 Yes No No Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs	Yes; From 10 to 499 10 Yes No No Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs • between the channels and backplane bus	Yes; From 10 to 499 10 Yes No No Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs • between the channels and backplane bus Isolation	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs • between the channels and backplane bus Isolation Isolation tested with Ambient conditions	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes
- adjustable - preset Service data • can be read out Interrupts/diagnostics/status information Alarms Diagnostics function Diagnostics indication LED • Status indicator digital input (green) • Status indicator digital output (green) Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs • between the channels and backplane bus Isolation Isolation Isolation tested with Ambient conditions Ambient temperature during operation	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes Yes
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes Yes O °C
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes Yes
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes Yes O °C
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes O °C 60 °C
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes Yes Yes Yes Yes
- adjustable - preset Service data	Yes; From 10 to 499 10 Yes No No Yes Yes Yes Yes O °C 60 °C

 Command set 	see instruction list
 Nesting levels 	8
 System functions (SFC) 	see instruction list
 System function blocks (SFB) 	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	120 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	640 g

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last modified: