SIEMENS

Data sheet

6ES7151-8AB01-0AB0



SIMATIC DP, IM151-8 PN/DP CPU f. ET200S, 192 KB work memory, int. PROFINET interface (with three RJ45 ports) as IO controller, without battery MMC required

Figure similar

General information	
HW functional status	01
Firmware version	V3.2
Product function	
Isochronous mode	No
Engineering with	
Programming package	as of STEP 7 V5.5 or as of STEP 7 TIA Portal V11
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; against destruction
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Input current	
Inrush current, typ.	1.8 A
l²t	0.13 A ² ·s
from supply voltage 1L+, max.	352 mA; 426 mA with DP master module
Output current	
for backplane bus (5 V DC), max.	700 mA
Power loss	
Power loss, typ.	5.5 W
Memory	
Work memory	
• integrated	192 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 y
Backup	
• present	Yes; Ensured by SIMATIC Micro Memory Card (maintenance-free)
CPU processing times	
for bit operations, typ.	0.06 µs
for word operations, typ.	0.12 µs
•	

for fixed point arithmetic, typ.	0.16 µs
for floating point arithmetic, typ.	0.59 μs
PU-blocks	
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	4 004 N
Number, max. Size may.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	4.024: Number range: 0 to 7000
Number, max. Size may.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
Number, max.	See S7-300 operation 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; only for PROFINET
Number of startup OBs	1; OB 100
Number of asynchronous error OBs	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for centralized I/O and PROFINET IO)
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
per priority class	16
additional within an error OB	4
ounters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	· · · · · · · · · · · · · · · · · · ·
— adjustable	Yes
— lower limit	0
— upper limit	999
EC counter	Yes
presentType	SFB
TypeNumber	Unlimited (limited only by RAM capacity)
● Number S7 times	Offinitive Children of the De Landscotte (Intrinsical Children of the Control of
Number	256
Retentivity	200
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	,
— lower limit	10 ms
— upper limit	9 990 s
EC timer	
• present	Yes
• Type	SFB

Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	
• Size, max.	256 byte
 Retentivity available 	Yes
 Retentivity preset 	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
 Retentivity adjustable 	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
• Inputs	2 048 byte
• Outputs	2 048 byte
of which distributed	0.0401.4
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	2.049 byte
Inputs, adjustable Outputs, adjustable	2 048 byte
Outputs, adjustable Inputs, default	2 048 byte
Inputs, default Outputs, default	128 byte
Outputs, default Subprocess images	128 byte
Subprocess images • 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	16 336
— of which central	496
Outputs	16 336
— of which central	496
Analog channels	
• Inputs	1 021
— of which central	124
Outputs	1 021
— of which central	124
Hardware configuration	
Number of modules per system, max.	63; Centralized
Mounting rail	
Number of mounting rails that can be used	1
Length of mounting rail, max.	Station width: ≤ 1 m or < 2 m
Time of day	
Clock	V
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time Deviation per day, may	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max. Rehavior of the clock following ROWER ON.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON Behavior of the clock following expire of backup	Clock continues running after POWER OFF
 Behavior of the clock following expiry of backup period 	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	1
Number/Number range	0
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes

 to MPI, master 	No
A- MDL -I	No
• to MPI, slave	No
• to DP, master	Yes; With DP master module
• to DP, slave	Yes; With DP master module
• in AS, master	No
• in AS, slave	No No
on Ethernet via NTP	Yes; As client
Interfaces	
Interfaces/bus type	1x PROFINET (3 RJ45 ports)
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
 Number of ports 	3; RJ45
• integrated switch	Yes
Protocols	
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFINET CBA	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes
Point-to-point connection	No
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s; full duplex
Services	
Services — PG/OP communication	Yes
	Yes Yes; With DP master module
— PG/OP communication	Yes; With DP master module
— PG/OP communication — Routing	Yes; With DP master module Yes; with loadable FBs
— PG/OP communication— Routing— S7 communication	Yes; With DP master module
— PG/OP communication— Routing— S7 communication— Isochronous mode	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 128 64
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 128 64 64
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 128 64 64 128
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" — of which in line, max. — Number of connectable IO Devices for RT, 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 128
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" — of which in line, max. — Number of connectable IO Devices for RT, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 128
 PG/OP communication Routing S7 communication Isochronous mode IRT Shared device Prioritized startup Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Of which IO devices with IRT, max. of which in line, max. Number of IO Devices with IRT and the option "high flexibility" of which in line, max. Number of connectable IO Devices for RT, max. of which in line, max. of which in line, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 128 61 128
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" — of which in line, max. — Number of connectable IO Devices for RT, max. — of which in line, max. — of which in line, max. — Activation/deactivation of IO Devices — Number of IO Devices that can be 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 128 61 128 128 128
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" — of which in line, max. — Number of connectable IO Devices for RT, max. — of which in line, max. — Activation/deactivation of IO Devices — Number of IO Devices that can be simultaneously activated/deactivated, max. — IO Devices changing during operation (partner 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 128 61 128 128 128 128 128 128 128 128 128
 PG/OP communication Routing S7 communication Isochronous mode IRT Shared device Prioritized startup Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Of which IO devices with IRT, max. of which in line, max. Number of IO Devices with IRT and the option "high flexibility" of which in line, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices Number of IO Devices that can be simultaneously activated/deactivated, max. IO Devices changing during operation (partner ports), supported 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 4 4 64 64 64 128 61 128 7 8 Yes 8 Yes
 — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Of which IO devices with IRT, max. — of which in line, max. — Number of IO Devices with IRT and the option "high flexibility" — of which in line, max. — Number of connectable IO Devices for RT, max. — of which in line, max. — Activation/deactivation of IO Devices — Number of IO Devices that can be simultaneously activated/deactivated, max. — IO Devices changing during operation (partner ports), supported — Number of IO Devices per tool, max. 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32 128 64 64 64 128 61 128 128 Yes 8

	I/O, on the number of I/O devices, and on the number of configured user
— Updating times	data items. 250 µs to 512 ms (depends on operating mode; for more details, refer to
Address area	Operating Instructions, "Interface Module IM151-8 PN/DP CPU")
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data consistency, max.	1 024 byte; with PROFINET I/O
PROFINET IO Device	1 024 byte, With PROPINET I/O
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; with loadable FBs
Isochronous mode	No
— ISCANIONOUS Mode — IRT	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device
— Shared device	Yes
 Number of IO Controllers with shared device, max. 	2
Transfer memory	
— Inputs, max.	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	
acyclic transmission	Yes
cyclic transmission	Yes
Open IE communication	
Number of connections, max.	8
 Local port numbers used at the system end 	0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Local port numbers used at the system end2. Interface	
2. Interface	
	65532, 65533, 65534, 65535
2. Interface Interface type Isolated	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0
2. Interface Interface type	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0
2. Interface Interface type Isolated Interface types • RS 485	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0 Yes
2. Interface Interface type Isolated Interface types	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0 Yes Yes
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max.	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0 Yes Yes
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFINET IO Controller	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFINET IO Controller • PROFINET IO Device	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA	65532, 65533, 65534, 65535 External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFINET CBA • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max.	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max.	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No Yes No No No Yes No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No Yes No 12 Mbit/s 32; Per station
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No Yes No 12 Mbit/s 32; Per station
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
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2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No
2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server 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, as client	External interface via master module 6ES7138-4HA00-0AB0 Yes Yes No No No No No No No No No No No No No

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— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
 Number of DP slaves that can be simultaneously activated/deactivated, max. 	8
Direct data exchange (slave-to-slave)	Yes
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
Protocols	
Redundancy mode	
Media redundancy	
— MRP	Yes
Switchover time on line break, typ.	200 ms; PROFINET MRP
Number of stations in the ring, max.	50
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	8
Data length for connection type 01H, max.	1 460 byte
Data length for connection type 11H, max.	32 768 byte
several passive connections per port,	Yes
supported	
• 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	
• supported	Yes
 User-defined websites 	Yes
 Number of HTTP clients 	5
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes; With DP master module
Global data communication	,
• supported	No
S7 basic communication	
• supported	Yes; I blocks
User data per job, max.	76 byte
 User data per job (of which consistent), max. 	76 byte
S7 communication	
supported	Yes
as server	Yes
• as client	Yes; via integrated PROFINET interface and loadable FBs
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)
communication functions / PROFINET CBA (with set target c	ommunication load) / header
 Setpoint for the CPU communication load 	50 %
 Number of remote interconnection partners 	32
 Number of functions, master/slave 	30
 Total of all master/slave connections 	1 000
Data length of all incoming connections	4 000 byte
master/slave, max.	
 Data length of all outgoing connections 	
master/slave may	4 000 byte
master/slave, max. • Number of device-internal and PROFIBUS	4 000 byte 500

interconnections **Data length per connection, max.** performance data / PROFINET CBA / temote interconnection / with appcite transfer / header - Samping interval, min.** - Number of uncoming interconnections - Number of outgoing interconnections - Number of outgoing interconnections - Data length of all outgoing interconnections, max. - Data length of all outgoing interconnections, max. - Data length of all outgoing interconnections, max. - Data length of all outgoing interconnections. - Transmission frequency: Transmission interval, min. - Number of incoming interconnections. - Number of outgoing interconnections. - Number of outgoing interconnections. - Number of outgoing interconnections. - Data length of all outgoing interconnections. - Number of Intimate and Intimate a		
interconnections, max. Deals length per connection, max. Deals length of all incoming interconnections. Number of unposing interconnections. Number of ordiging interconnections. Number of ordiging interconnections. Data length of all incoming interconnections. Data length of all incoming interconnections. Data length of all incoming interconnections. Data length of all outgoing interconnections. Transmission frequency: Transmission interval, inc. Number of interconnections. Number of outgoing interconnections. Data length of all interconnections. Data length of all interconnection. Number of IshM variables. Data length of all interconnections. Data length of all interconnections. Data length of all interconnection. PAR server Supported Yes Number of connections PAR server Supported Pages and PROFIBLS devices 10 Data length of Communication. Data length of Communicat		
performance data / PROFINET CBA / remote interconnection / with acyclic transfer / header - Sampling interval, m.in Number of incoming interconnections - Number of incoming interconnections - Data length of all incoming interconnections, - Data length of all incoming interconnections, - Data length of all outgoing interconnections, - Data length of all outgoing interconnections, - Data length of all outgoing interconnections, - Data length per connection, max Data length of all outgoing interconnections / with cyclic transfer / header - Transmission frequency. Transmission interval, - Mumber of incoming interconnections - Number of incoming interconnections - Number of incoming interconnections, - Data length of all outgoing interconnections, - Data length per connection, max So byte - Number of stations that can log on for HMI - Variables (PN OPC/IMAp) - HMI variables (PN O	interconnections, max.	4 000 byte
- Sampling interval, min. Number of incoming inferconnections - Number of outgoing inferconnections - Data length of all necoming inferconnections, max Data length of all outgoing inferconnections, max Data length per connection, max Data length per connection, max Data length per connection, max Number of outgoing interconnections of the performance data / PROFINET GBA / remote inferconnectors / with cyclic transfer / header - Transmission frequency. Transmission interval Number of incoming interconnections of the performance data incoming interconnections of the performance o	Data length per connection, max.	1 400 byte
- Number of incoming interconnections 100 - Number of sudgoing interconnections, 2000 byte more connections, 2000 byte more connections, 2000 byte more connection, 2000 byte performance data / PROFINET CBA / Half variables via PROFINET / acyclic / header connection, 2000 byte more connection, 2000 byte more connection, 2000 byte performance data / PROFINET CBA / PROFINET C	performance data / PROFINET CBA / remote interconne	ction / with acyclic transfer / header
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 — 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. Test commissioning functions Status block Single step Yes Uith DP master module 12; Depending on the configured connections for PG/OP and S7 basic communication Yes; ALARM_SC, ALARM_SC, ALARM_SQ, ALARM_DQ and ST basic communication Yes; Up to 2 simultaneously Yes; Up to 2 simultaneously 		
 total number of instances, max. usable for routing 4; With DP master module 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 Yes; With DP master module 12; Depending on the configured connections for PG/OP and S7 basic communication Yes; ALARM_SC, ALARM_SQ, ALARM_DQ, ALARM_DQ Yes; Up to 2 simultaneously Yes; Up to 2 simultaneously 		
● usable for routing 4; With DP master module S7 message functions Number of login stations for message functions, max. 12; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages yes; ALARM_SC, ALARM_SC, ALARM_DD, ALARM_DQ simultaneously active Alarm-S blocks, max. 300 Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes	•	
Number of login stations for message functions, max. 12; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes; ALARM_SC, ALARM_SQ, ALARM_DQ simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Yes; Up to 2 simultaneously Yes	•	
Number of login stations for message functions, max. 12; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes; ALARM_SC, ALARM_SQ, ALARM_DQ, ALARM_DQ simultaneously active Alarm-S blocks, max. 12; Depending on the configured connections for PG/OP and S7 basic communication Yes; ALARM_SC, ALARM_SQ, ALARM_DQ, ALARM_DQ Simultaneously active Alarm-S blocks, max. Yes; Up to 2 simultaneously Single step Yes		1, THELDE HIGGER HIGGER
Process diagnostic messages yes; ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes		
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes		
Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes		
Status block Yes; Up to 2 simultaneously Single step Yes		300
Single step Yes	Test commissioning functions	
<u> </u>	Status block	Yes; Up to 2 simultaneously
Number of breakpoints 4	Single step	Yes
	Number of breakpoints	4

Status/control	
Status/control	Voc
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	V
• Forcing	Yes
• Forcing, variables	I/O
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
Interrupts/diagnostics/status information	
Alarms	Yes
Diagnostics function	Yes
Diagnostics indication LED	
for maintenance	Yes; MT
Bus fault BF (red)	Yes; BF-PN
 Group error SF (red) 	Yes
 Monitoring 24 V voltage supply ON (green) 	Yes
Bus activity PROFINET (green)	Yes; P1-/P2-/P3-Link
Potential separation	
between PROFIBUS DP and all other circuit components	Yes
Isolation	103
Isolation tested with	500 V DC
	500 V DC
Degree and class of protection	
IP degree of protection	IP20
configuration / header	
Configuration software	
• STEP 7	Yes; V5.5 or higher
configuration / programming / header	
 Command set 	see instruction list
Command setNesting levels	see instruction list 8
 Nesting levels 	8
Nesting levelsSystem functions (SFC)	8 see instruction list
Nesting levelsSystem functions (SFC)System function blocks (SFB)	8 see instruction list
Nesting levelsSystem functions (SFC)System function blocks (SFB)Programming language	8 see instruction list see instruction list
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD 	8 see instruction list see instruction list Yes
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD 	8 see instruction list see instruction list Yes Yes
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL 	8 see instruction list see instruction list Yes Yes Yes
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL 	8 see instruction list see instruction list Yes Yes Yes Yes Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC 	8 see instruction list see instruction list Yes Yes Yes Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® 	8 see instruction list see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection 	8 see instruction list see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection User program protection/password protection Block encryption 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; With S7 block Privacy
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit 	8 see instruction list Yes Yes Yes Yes; Optional
Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; With S7 block Privacy 1 ms 6 000 ms Yes
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable preset 	8 see instruction list Yes Yes Yes Yes; Optional
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable preset Dimensions 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; With S7 block Privacy 1 ms 6 000 ms Yes 150 ms
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable preset Dimensions Width 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes Yes 150 ms
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable preset Dimensions Width Height 	8 see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes Y
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection User program protection/password protection Block encryption programming / cycle time monitoring / header lower limit upper limit adjustable preset Dimensions Width 	see instruction list Yes Yes Yes Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes; Optional Yes Yes 150 ms

Weight, approx.	320 g; DP master module: Approx. 100 g
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