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	Vere de la caracte de DD
Retentivity adjustable Retentivity procest	Yes; via non-retain property on DB
Retentivity preset Local data	Yes
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	02 700 byte, max. 2040 bytes per block
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, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
• Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	A WILL DROUBLET IO II .
 Number of subprocess images, max. 	1; With PROFINET IO, the length of the user data is limited to 1600 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	CO. Osistaslinad
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	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature, typically
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	1
Number Number range	1
Number/Number range Pange of values	0 0 to 2031 hours (when using SEC 101)
Range of values Granularity	0 to 2^31 hours (when using SFC 101)
Granularityretentive	1 h Yes; Must be restarted at each restart
Clock synchronization	100, must be restarted at each restart
• supported	Yes
- Jupportou	100

• to MPI, master	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
• on Ethernet via NTP	Yes; As client
	165, A5 CHERT
Interfaces	4v PROCINCT (2 P.145 ports)
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	
FROI INCT TO CONTROLLE	
Transmission rate, max.	100 Mbit/s; full duplex
	100 Mbit/s; full duplex
Transmission rate, max.	100 Mbit/s; full duplex Yes
Transmission rate, max. Services	
 Transmission rate, max. Services PG/OP communication Routing 	Yes
Transmission rate, max.Services— PG/OP communication	Yes Yes; With DP master module
 Transmission rate, max. Services PG/OP communication Routing S7 communication 	Yes Yes; With DP master module Yes; with loadable FBs
 Transmission rate, max. Services PG/OP communication Routing S7 communication Isochronous mode 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO
 Transmission rate, max. Services PG/OP communication Routing S7 communication Isochronous mode IRT 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes
 Transmission rate, max. Services PG/OP communication Routing S7 communication Isochronous mode IRT Shared device Prioritized startup 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes
 Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — IRT — Shared device 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes
 Transmission rate, max. Services PG/OP communication Routing S7 communication Isochronous mode IRT Shared device Prioritized startup Number of IO devices with prioritized startup, 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes
 Transmission rate, max. Services PG/OP communication Routing S7 communication Isochronous mode IRT Shared device Prioritized startup Number of IO devices with prioritized startup, max. 	Yes Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes Yes Yes
 Transmission rate, max. Services 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 Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes Yes 32
 Transmission rate, max. Services 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
 Transmission rate, max. Services 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 32 128 64 64
 ◆ Transmission rate, max. Services — 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 32 128 64 64 64 128
 Transmission rate, max. Services — 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 64 128
 Transmission rate, max. Services — 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
 Transmission rate, max. Services — 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 	Yes; With DP master module Yes; with loadable FBs Yes; OB 61; only for PROFINET IO Yes Yes 32 128 64 64 128 61 128
 Transmission rate, max. Services — 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
 Transmission rate, max. Services — 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 64 128 61 128 128 Yes 8
 ◆ Transmission rate, max. Services — 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. — Device replacement without swap medium 	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 Yes
 Transmission rate, max. Services — 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 64 128 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 Yes
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
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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. 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 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 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
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 — 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
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 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

- SYNCPREEZE - Activatorivacetowal or DP slaves - Number of DP slaves that can be a simultaneously activated/decarbited, max Direct data exchange (slave-to-slave communication) - DPV1	0.0.0.	
Number of DP slaves that can be simultaneously activated backerized, max. Direct data exchange (slave-lo-slave communication) DPV1		
simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 2 048 byte — Inputs, max. 2 048 byte — Inputs, max. 2 44 byte — Inputs, max. 2 244 byte Protocols Redundancy mode Mediar aroundancy — MRP — Switchover time on line break, bp. 200 ms, PROFINET MRP — Number of stations in the ring, max. 50 Open IE communication • TCP/P — Number of connections, max. — Data length for connection type 01H, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of connections, max. 8 — Data length, max. 32 768 byte • UIDP — Number of connections, max. 8 — Data length, max. 32 768 byte • UIDP — Number of connections, max. 8 — Data length, max. 32 768 byte • UIDP — Number of connections, max. 8 — Data length, max. 32 768 byte • Supported • USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Supported • UIDP • Number of connections, max. 8 • Data length, max. 92 768 byte • Supported • USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Supported • USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Supported • USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of connections, max. 76 byte Statement of Interface of the USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of connections of the USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of connections of the USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of the USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Number of the USB-on-TCP (RFC1006) Yes; via integrated PROFINET interface and loadable FBs • Seponter of the USB-on-TCP (R		
communication) DPV1 Address area Inputs, max. Outputs, max. Outputs, max. Outputs, max. Inputs, max. Outputs, max. Outputs, max. Outputs, max. 2 44 byte Inputs, max. 2 44 byte Inputs, max. Outputs, max. Protocots Redundancy mode Media redundancy Media redundancy Media redundancy Inputs, max. Solutions of the ring, max. Outputs, max. Outputs, max. Outputs, max. Inputs, max. Outputs,		8
Address area Inputs, max. Outputs, max. Outputs, max. Outputs, max. 2 048 byte Inputs, max. 2 048 byte Inputs, max. Outputs, max. 2 244 byte Protocols Redundancy mode Media redundancy Inputs, max. A 244 byte Protocols Redundancy mode Media redundancy Inputs, max. Inputs, max. A 244 byte Protocols Redundancy mode Media redundancy Inputs, max. Inputs, ma		Yes
Inputs, max. 2 048 byte 2 048	— DPV1	Yes
User data per DP slave - Inputs, max. 244 byte - Duputs, max. 244 byte Protocols Redundancy mode Media redundancy - MRP - Switchover time on line break, byp. 200 ms; PROFINET MRP - Switchover time on line break, byp. 400 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication - TCPIP - Number of connections, max. 8 - Data length for connection type 01H, max. 1460 byte - supported - ISO-an-TCP (RFC1009) 49 significant of the signifi	Address area	
User data per DP slave - Inputs, max. 244 byte - Duputs, max. 244 byte Protocols Redundancy mode Media redundancy - MRP - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 Open IE communication - TCPIP - Number of connections, max. 50 Open IE communication - TCPIP - Number of connections byte 01H, max. 50 Open IE communication - Station of Connections of the ring, max. 50 Open IE communication - TCPIP - Number of connections byte 01H, max. 52 - Data length for connection type 01H, max. 52 - Data length for connections per port, 52 - Supported - ISO-On-TCP (RFC1008) 52 - Number of connections, max. 52 - Data length, max. 54 - UIDP - Number of connections, max. 68 - Data length, max. 54 - UIDP - Supported - User-defined websites 72 - Supported 74 - Supported 74 - Supported 75 - Supported	— Inputs, max.	2 048 byte
User data per DP slave Inputs, max. 244 byte Protocols Redundancy mode Media redundancy IMP Switchover time on line break, typ. 200 ms; PROFINET MRP Switchover time on line break, typ. 200 ms; PROFINET MRP Number of stations in the ring, max. 50 PopenIE communication TCPAP Number of connections, max. 8 Data length for connection type 01H, max. 32 768 byte supported ISO-on-TDC (RPC1006) Yes; via integrated PROFINET interface and loadable FBs Number of connections, max. 8 ISO-on-TDC (RPC1006) Yes; via integrated PROFINET interface and loadable FBs Number of connections, max. 32 768 byte Seponted ISO-on-TDC (RPC1006) Yes; via integrated PROFINET interface and loadable FBs Number of connections, max. 32 768 byte PSW via integrated PROFINET interface and loadable FBs Number of connections, max. 1472 byte Number of connections, max. 1472 byte Number of connections, max. 1472 byte Number of time	•	
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Redundancy mode Media redundancy		244 0360
Media redundancy		
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- Data length for connection type 11H, max several passive connections per port, supported • ISO-on-TCP (RFC1006) - Number of connections, max Data length, max. • UDP - Yes; via integrated PROFINET interface and loadable FBs • Number of connections, max Data length, max. • UDP - Number of connections, max Data length, max. • Data length, max. • UDP - Number of connections, max Data length, max. • USP - Number of three in the interface and loadable FBs • Number of HTTP clients • Supported • User-defined websites • Yes • Number of HTTP clients • Supported - Sey: With DP master module Global data communication • Supported • Supported • Supported • User data per job, max User data per job (of which consistent), max. • Supported • Sommunication • Supported • Sey: Via data per job (of which consistent), max. • Supported • Sey: Via integrated PROFINET interface and loadable FBs **Sommunication • Supported • Sey: With DP master module **Sommunication • Supported • Sey: Via integrated PROFINET interface and loadable FBs **Sommunication • Supported • Sey: Via integrated PROFINET interface and loadable FBs **Sommunication • Supported • Sey: Via integrated PROFINET interface and loadable FBs **Sommunication • Supported • Sey: Via integrated PROFINET interface and loadable FBs **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 larget communication load) / header • Setpoint for the CPU communication load • number of remote connection partners / with PROFINET CBA • number of remote connection / with PROFINET CBA for master or slave • number of technological functions / with PROFINET CBA / for master or slave • number of the input variables / with PROFINET CBA / for master or slave		
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- Number of connections, max Data length, max. - Supported	• • • • • • • • • • • • • • • • • • • •	
- Data length, max. • UDP - Number of connections, max. - Data length, max. - Data length, max. 1 472 byte Web server • supported • User-defined websites • Number of HTTP clients 5 communication functions / header PG/OP communication • supported • Sup	• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
UDP Number of connections, max. Data length, max. 1 472 byte Web server supported User-defined websites Number of HTP clients Communication functions / header PG/OP communication Supported Supported Supported No S7 basic communication Supported Ves; With DP master module Global data communication Supported Ves; With DP master module S7 basic communication Supported Ves; I blocks User data per job, max. Ves; I blocks S7 communication Sypoported Ves; I blocks User data per job, max. Ves; I blocks S8 communication Sypoported Ves; I blocks User data per job, max. User data per job, max. Sypoported S8 server S9 communication S9 communication functions / PROFINET CBA (with set target communication load) / header S9 communication functions / PROFINET CBA (with set target communication load) / header S9 communication functions / PROFINET CBA (with set target communication load) / header S9 communication functions / PROFINET CBA (with set target communication load) / header S9 communication functions / PROFINET CBA (with PROFINET CBA / for master or slave S9 communication / With PROFINET CBA / for master or slave S9 communication / S9 communication / With PROFINET CBA / for master or slave S9 communication / S9	 Number of connections, max. 	8
Number of connections, max Data length, max. Data length, max. Data length, max. Data length, max. 1472 byte Web server supported supported User data per job, max User data	— Data length, max.	32 768 byte
Data length, max. 1 472 byte Web server • supported • User-defined websites • Number of HTTP clients 5 communication functions / header PG/OP communication • supported • Supported • Supported • No S7 basic communication • supported • User data per job, max. • User data per job, communication • supported • 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) communication functions / PROFINET CBA (with set target communication load) / header • Setpoint for the CPU communication and unumber of remote connection partners / with PROFINET CBA for master or slave • number of connections / with PROFINET CBA for master or slave • number of the input variables / with PROFINET CBA / for master or slave • doubt A 1 4 000 byte 1 4 000 byte 1 4 000 byte 1 4 000 byte	• UDP	Yes; via integrated PROFINET interface and loadable FBs
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Supported User-defined websites Number of HTTP clients Tyes Number of HTTP clients Tyes Data record routing Global data communication Stream Supported Supported Supported Supported Ves; I blocks User data per job, max. Stream Supported Suppor	— Data length, max.	1 472 byte
User-defined websites Number of HTTP clients Number of HTTP clients FG/OP communication / trunctions / header PG/OP communication State record routing Global data communication Supported Supported Supported Super of the input variables / with PROFINET CBA / for master or slave User data per job, with PROFINET CBA / for master or slave User data per job, with PROFINET CBA / for master or slave User data per job, with PROFINET CBA / with PROFINET CBA / for master or slave User data per job, with PROFINET CBA / for master or slave User data per job, with PROFINET CBA / for master or slave Ves Ves Ves Ves Ves Ves Ves V	Web server	
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Data record routing Global data communication • supported No S7 basic communication • supported Yes; I blocks • User data per job, max. • User data per job (of which consistent), max. • S7 communication • supported • supported • supported • supported • supported • supported • as server • as client • User data per job, max. • User data per job, max. • 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 communication load) / header • Setpoint for the CPU communication load • Number of remote connection partners / with PROFINET CBA • number of technological functions / with PROFINET CBA / for master or slave • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave • number of technological functions / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave		Yes
Global data communication • supported No S7 basic communication • supported • User data per job, max. • User data per job (of which consistent), max. 76 byte S7 communication • supported • 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) communication functions / PROFINET CBA (with set target communication load) / header • Setpoint for the CPU communication load • number of remote connection partners / with PROFINET CBA • number of technological functions / with PROFINET CBA / for master or slave • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave		
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S7 basic communication • supported • User data per job, max. • User data per job (of which consistent), max. 76 byte 76 byte 77 communication • supported • supported • supported • supported • supported • as server • as client • User data per job, max. • User data per job, max. **Communication functions / PROFINET CBA (with set target communication load) / header • Setpoint for the CPU communication load • number of remote connection partners / with PROFINET CBA • number of technological functions / with PROFINET CBA / for master or slave • data volume / of the input variables / with PROFINET CBA / for master or slave • data volume / of the input variables / with PROFINET CBA / for master or slave		No
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S7 communication • supported • as server • as client • User data per job, max. Communication functions / PROFINET CBA (with set target communication load) / header • Setpoint for the CPU communication load • number of remote connection partners / with PROFINET CBA (with PROFINET CBA / for master or slave) • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave		*
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the SFCs/FCs of S7 Communication) communication functions / PROFINET CBA (with set target communication load) / header • Setpoint for the CPU communication load 50 % • number of remote connection partners / with PROFINET CBA • number of technological functions / with PROFINET CBA / for master or slave • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave		
 Setpoint for the CPU communication load number of remote connection partners / with PROFINET CBA number of technological functions / with PROFINET CBA / for master or slave number of connections / with PROFINET CBA / for master or slave / total data volume / of the input variables / with PROFINET CBA / for master or slave 	User data per job, max.	
 number of remote connection partners / with PROFINET CBA number of technological functions / with PROFINET CBA / for master or slave number of connections / with PROFINET CBA / for master or slave / total data volume / of the input variables / with PROFINET CBA / for master or slave 	communication functions / PROFINET CBA (with set target c	ommunication load) / header
PROFINET CBA • number of technological functions / with PROFINET CBA / for master or slave • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave	 Setpoint for the CPU communication load 	50 %
CBA / for master or slave • number of connections / with PROFINET CBA / for master or slave / total • data volume / of the input variables / with PROFINET CBA / for master or slave 4 000 byte		32
master or slave / total ● data volume / of the input variables / with PROFINET CBA / for master or slave 4 000 byte		30
PROFINET CBA / for master or slave		1 000
• data volume / of the output variables / with 4 000 byte	·	4 000 byte
	data volume / of the output variables / with	4 000 byte

PROFINET CBA / for master or slave	500
 number of internal and PROFIBUS interconnections / with PROFINET CBA / maximum 	500
 data volume / of internal and PROFIBUS interconnections / with PROFINET CBA / for master or slave 	4 000 byte
 data volume / with PROFINET CBA / per connection / maximum 	1 400 byte
performance data / PROFINET CBA / remote interconne	ction / with acyclic transfer / header
 update time / of the remote interconnections / in the case of acyclic transmission / with PROFINET CBA 	500 ms
 number of remote connections to input variables / in the case of acyclic transmission / with PROFINET CBA / maximum 	100
 number of remote connections to output variables / in the case of acyclic transmission / with PROFINET CBA / maximum 	100
 data volume / as user data for remote interconnections with input variables / in the case of acyclic transmission / with PROFINET CBA 	2 000 byte
 data volume / as user data for remote interconnections with output variables / in the case of acyclic transmission / with PROFINET CBA 	2 000 byte
 data volume / as user data for remote interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum 	1 400 byte
performance data / PROFINET CBA / remote interconne	ction / with cyclic transfer / header
 update time / of the remote interconnections / with cyclical transfer / with PROFINET CBA 	1 ms
 number of remote connections to input variables / with PROFINET CBA / with cyclic transfer / maximum 	200
 number of remote connections to output variables / with cyclical transfer / with PROFINET CBA / maximum 	200
 data volume / as user data for remote interconnections with input variables / with cyclical transfer / with PROFINET CBA / maximum 	2 000 byte
 data volume / as user data for remote interconnections with output variables / with cyclical transfer / with PROFINET CBA / maximum 	2 000 byte
 data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum 	450 byte
performance data / PROFINET CBA / HMI variables via I	·
 number of connectable HMI stations / for HMI variables / in the case of acyclic transmission / with PROFINET CBA 	3; 2x PN OPC/1x iMap
 update time / of the HMI variables / in the case of acyclic transmission / with PROFINET CBA 	500 ms
 number of HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum 	200
 data volume / as user data for HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum 	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy	•
 product function / with PROFINET CBA / PROFIBUS proxy functionality 	Yes
 number of coupled PROFIBUS devices / with PROFIBUS functionality 	16
 data volume / with PROFIBUS proxy functionality / with PROFINET CBA / per connection / maximum 	240 byte; Slave-dependent
iPAR server	
• supported	Yes
Number of connections	

overall	12
usable for PG communication	11
reserved for PG communication	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	11
usable for OP communication	11
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	11
usable for S7 basic communication	10
— reserved for S7 basic communication	0
 adjustable for S7 basic communication, min. 	0
 adjustable for S7 basic communication, max. 	10
 usable for S7 communication 	10; with loadable FBs
 adjustable for S7 communication, max. 	10
 total number of instances, max. 	32
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_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ
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 control variables, max.	14
Forcing	17
• Forcing	Yes
Forcing, variables	I/O
Number of variables, max.	10
Diagnostic buffer	10
• present	Yes
·	500
Number of entries, max.	
— 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	
Isolation tested with	500 V DC
Degree and class of protection	
IP degree of protection	IP20
configuration / header	
Configuration software • STEP 7	Voc. V5.5 or higher
♥ 01Li /	Yes; V5.5 or higher

configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language	
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — SCL — CFC Yes; Optional Yes; Optional 	
 System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC yes; Optional Yes; Optional 	
 System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC Yes Yes Yes Yes Yes Yes Yes Yes Optional Yes; Optional 	
Programming language Yes — FBD Yes — STL Yes — SCL Yes; Optional — CFC Yes; Optional	
— LAD Yes — FBD Yes — STL Yes — SCL Yes; Optional — CFC Yes; Optional	
— FBD Yes — STL Yes — SCL Yes; Optional — CFC Yes; Optional	
 STL SCL CFC Yes Yes; Optional Yes; Optional 	
— SCL— CFCYes; OptionalYes; Optional	
— CFC Yes; Optional	
— GRAPH Yes; Optional	
— HiGraph® Yes; Optional	
Know-how protection	
User program protection/password protection Yes	
Block encryption Yes; With S7 block Privacy	
programming / cycle time monitoring / header	
• lower limit 1 ms	
• upper limit 6 000 ms	
• adjustable Yes	
• cycle monitoring time / preset 150 ms	
Dimensions	
Width 120 mm; DP master module: 35 mm	
Height 119.5 mm	
Depth 75 mm	
Weights	
Weight, approx. 320 g; DP master module: Approx. 100 g	

4/1/2022

last modified: