Data sheet 6ES7318-3FL01-0AB0



SIMATIC S7-300 CPU319F-3 PN/DP, Central processing unit with 2.5 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave 3rd interface Ethernet PROFINET, Micro Memory Card required

General information	
Product type designation	CPU 319F-3 PN/DP
HW functional status	01
Firmware version	V3.2
Product function	
 Isochronous mode 	Yes; Via 2nd PROFIBUS DP or PROFINET interface
Engineering with	
Programming package	STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4
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.
Mains buffering	
Mains/voltage failure stored energy time	5 ms
Repeat rate, min.	1 s
Input current	
Current consumption (rated value)	1 250 mA
Current consumption (in no-load operation), typ.	500 mA
Inrush current, typ.	4 A
l²t	1.2 A²·s
Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
• integrated	2 560 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
without battery	Yes
CPU processing times	
for bit operations, typ.	0.004 μs
for word operations, typ.	0.01 μs
for fixed point arithmetic, typ.	0.01 µs

CPU-blocks	
Number of blocks (total)	4 096; (DBs, FCs, FBs); the maximum number of loadable blocks can be
(/	reduced by the MMC used.
DB	
Number, max.	4 096; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	4 096; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	4 096; Number range: 0 to 7999
• Size, max.	64 kbyte
OB Cina man	OA Lb. da
Size, max. Number of free surele ODs.	64 kbyte
Number of free cycle OBs Number of time clarge OBs	1; OB 1
Number of delay clarm OBs	1; OB 10
Number of delay alarm OBs Number of evalia interrupt OBs	2; OB 20, 21
Number of process clarm OPs	4; OB 32, 33, 34, 35 (OB 35: smallest settable clock pulse = 500 μs)
Number of process alarm OBsNumber of DPV1 alarm OBs	1; OB 40
Number of DPV1 alarm OBs Number of isochronous mode OBs	3; OB 55, 56, 57
Number of isocnironous mode OBs Number of startup OBs	1; OB 100
Number of startup OBs Number of asynchronous error OBs	1; OB 100 6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
Number of asynchronous error OBs Number of synchronous error OBs	6, OB 60, 62, 63, 65, 66, 87 (OB63 ONLY TO PROFINE FIO) 2; OB 121, 122
Nesting depth	Z, OB 121, 122
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	-
S7 counter	
• Number	2 048
Retentivity	2 040
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	201021
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	Criminios (minica ciny by runni capacity)
• Number	2 048
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
 Type 	SFB
• Number	Unlimited (limited only by RAM capacity)
Pata areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	700 kbyte
Flag	
• Size, max.	8 192 byte
Retentivity available	Yes; From MB 0 to MB 8 191
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 adjustable Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
• Inputs	8 192 byte
Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	8 192 byte
Outputs	8 192 byte
 Inputs, adjustable 	8 192 byte
 Outputs, adjustable 	8 192 byte
 Inputs, default 	1 024 byte
Outputs, default	1 024 byte
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	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	
• Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of DP masters	
• integrated	2
via CP Number of operable FMs and CPs (recommended)	4
	0
• FM	8
• CP, PtP • CP, LAN	10
Rack	10
• Racks, max.	4
Modules per rack, max.	8
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup period	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
• on MPI, device	Yes
• to DP, master	Yes; With DP slave only slave clock
. ,	, ,

In AS, master In AS, master In AS, device I		
e in AS, device	• on DP, device	Yes
on Ethernet via NTP Digital injusts Number of digital injusts Number of digital outputs Number of digital outputs Number of digital outputs Number of Record injusts Nu	• in AS, master	
Number of digital inputs O	• in AS, device	Yes
Number of digital inputs 0	on Ethernet via NTP	Yes; As client
Digital outputs O	Digital inputs	
Number of analog inputs Number of analog inputs 0	Number of digital inputs	0
Analog inputs Number of Ranlog inputs Interfaces Number of RS 426 interfaces Number of RS 422 interfaces 1.Interface	Digital outputs	
Number of PROFINET interfaces	Number of digital outputs	0
Interfaces 1	Analog inputs	
Number of RPOFINET interfaces	Number of analog inputs	0
Number of RS 422 interfaces 2 Number of RS 422 interfaces 0 Interface type Integrated RS 485 interface Isolated Yes Interface types • Output current of the interface, max. 150 mA Protocools • NPI Yes • PROFIBUS DP master Yes • PROFIBUS DP device Yes, A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP device Yes, A DP slave at both interfaces simultaneously is not possible • Promitto-point connection MPI • Transmission rate, max. 12 Mbit/s Services — PG/OP communication Yes — PG/OP communication Yes — Sommunication Yes — ST communication Yes — ST communication Yes — ST communication, as client No; but via CP and loadable FB — ST communication, as server Yes PROFIBUS DP master 12 Mbit/s • Transmission rate, max. 12 Mbit/s • PROFIBUS DP master 124 Mbit/s • Transmission rate, max. 12 Mbit/s • Profibus Profibus P	Interfaces	
Number of RS 422 interfaces 1. Interface type Interface type Isolated Yes Interface type • RS 485 • Output current of the interface, max. 150 mA Protocols • PROFIBUS DP master • PROFIBUS DP device • Point-to-point connection MPI • Transmission rate, max. 12 Mbit/s Services - PG/OP communication - S7 basic communication - S7 communication, as server • PROFIBUS DP master • Yes - PROFIBUS DP device • Point-to-point connection No MPI • Transmission rate, max. 12 Mbit/s Services - PG/OP communication - Yes - S7 basic communication - Yes - S7 communication - S7 communication - S7 communication - S7 communication, as server PROFIBUS DP master • Transmission rate, max. 12 Mbit/s - S7 communication, as client - S7 communication, as every PROFIBUS DP master • Transmission rate, max. 12 Mbit/s • Transmission rate, max. 12 Mbit/s - S7 communication - S7 basic communication - S7	Number of PROFINET interfaces	1
Interface type Integrated RS 485 interface Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device • PROFIBUS DP device • Protint-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — S7 basic communication — S7 communication, as erver • Transmission rate, max. 12 Mbit's Services — PG/OP communication — Yes — Global data communication — Yes — S7 communication, as erver — Yes • Transmission rate, max. 12 Mbit's Services — PG/OP communication — Yes — Routing — S7 communication — Yes — S7 communication — Yes — S7 communication, as erver — Yes PROFIBUS DP master • Transmission rate, max. 12 Mbit's • max. number of DP devices — PG/OP communication — Yes — Routing — Yes — Routing — Yes — Routing — Yes — Global data communication — Yes — Routing — Yes — Grommunication — Yes — PG/OP communication — Yes — PG/OP communication — Yes — Routing — Yes — Global data communication — Yes — Sy communication — Yes — Sy communication — Yes — Equidistance — Sy Communication, as erver — Yes — Equidistance — SyNC/FREEZE — activation/deactivation of DP devices — Max. number of DP devices that can be activated/deactivated at the same time	Number of RS 485 interfaces	2
Interface type Isolated Yes Interface types • RS 485 • Output current of the interface, max. 150 mA Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device • Point-to-point connection MPI • Transmission rate, max. 12 Mbit/s Services - PG/OP communication - S7 communication, as server PROFIBUS DP master • Transmission rate, max. 12 Mbit/s Services - PG/OP communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication -	Number of RS 422 interfaces	0
Interface types Output current of the interface, max. Interface types Interface types Output current of the interface, max. Interface types Interface typ	1. Interface	
Interface types ● NS 485 ● Output current of the interface, max. Protocots ● MPI ● PROFIBUS DP master ● PROFIBUS DP device ● Point-to-point connection MPI ● Transmission rate, max. 12 Mblt/s Services - PG/OP communication - Routing - S7 communication, as server ● Transmission rate, max. 12 Mblt/s Services - S7 communication	Interface type	Integrated RS 485 interface
■ RS 485 ■ Output current of the interface, max. Protocols ■ MPI PROFIBUS DP master PROFIBUS DP master PROFIBUS DP device Point-to-point connection No MPI ■ Transmission rate, max. Services ■ PG/OP communication S7 basic communication PS7 communication S7 communication S7 communication S7 communication S7 communication S8 communication S9 communication	Isolated	Yes
Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device Profibus DP device Point-to-point connection No MPI Transmission rate, max. 12 Mbit/s Services PG/OP communication Rost communication S7 communication S7 communication S7 communication S8 cervices PROFIBUS DP master Transmission rate, max. 12 Mbit/s Services PG/OP communication Yes S7 basic communication Yes S7 communication Yes S7 communication S7 communication S7 communication S8 cervices PROFIBUS DP master Transmission rate, max. 12 Mbit/s Transmission rate, max. 13 Mbit/s Transmission rate, max. 14 Mbit/s Transmission rate, max. 15 Mbit/s Transmission rate, max. 16 Transmission rate, max. 17 Mbit/s Transmission rate, max. 18 Mbit/s Transmission rate, max. 19 Mbit/s Transmission rate, max. 19 Mbit/s Transmission rate, max. 10 Mbit/s Transmission rate, max. 10 Mbit/s Transmission rate, max. 10 Mbit/s Transmission rate, max. 11 Mbit/s Transmission rate, max. 12 Mbit/s Transmission	Interface types	
Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device • Point-to-point connection No MPI • Transmission rate, max. Services - PG/OP communication - S7 basic communication - S7 communication, as client - S7 communication - Routing - ST communication - S7 communication	• RS 485	Yes
MPI PROFIBUS DP master PROFIBUS DP device Point-to-point connection No MPI Transmission rate, max. 12 Mbit/s PROFIBUS DP advice Point-to-point connection No MPI Transmission rate, max. 12 Mbit/s PST communication ST communication PST communication ST communication ST communication PROFIBUS DP master Transmission rate, max. 12 Mbit/s BY es PROFIBUS DP master Transmission rate, max. 12 Mbit/s PROFIBUS DP master Transmission rate, max. 12 Mbit/s PROFIBUS DP master PG/OP communication PGS evices PG/OP communication PGS evices PG-OP communication PST com	Output current of the interface, max.	150 mA
PROFIBUS DP master Proint-to-point connection No Proint-to-point connection Proint-to-po	Protocols	
PROFIBUS DP device Point-to-point connection No MPI Transmission rate, max. PG/OP communication PS accommunication PS communication PS communication PROFIBUS DP master Transmission rate, max. 12 Mbit/s Services PG/OP communication Pes PS basic communication Pes PS communication PS communication PS communication PS communication PS communication, as client PS communication, as client PROFIBUS DP master PROFIBUS DP master PROFIBUS DP devices PROFIBUS Cervices PROFIBUS Cervices PROFIBUS Cervices PS communication Pes Communication Pes Cervices PS communication PS communic	• MPI	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 communication Yes - S7 communication Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes PROFIBUS DP master ▼Transmission rate, max. 12 Mbit/s max. number of DP devices 124 Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication No - S7 basic communication Yes; i blocks only - S7 communication Yes; or communication Yes - S7 communication Se client No - S7 communication Se server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices Hat can be activated/ideactivated at the same time	 PROFIBUS DP master 	Yes
● 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 Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes PROFIBUS DP master ● Transmission rate, max. 12 Mbit/s • max. number of DP devices 124 Services - PG/OP communication Yes - Routing Yes - Routing Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivated at the same time 12 Mbit/s 12 Mbit/s 12 Mbit/s 124 Services 124 Services - PG/OP communication Yes - I blocks only - Yes - Equidistance Yes - Equidistance Yes - Equidistance Yes - Equidistance Yes - SYNC/FREEZE Yes - activation/deactivation of DP devices that can be activated/deactivated at the same time	 PROFIBUS DP device 	Yes; A DP slave at both interfaces simultaneously is not possible
 Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — S7 communication, as server ■ Transmission rate, max. ■ Transmission rate, max. ■ Transmission rate, max. ■ PG/OP communication — Routing — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Lequidistance — S9 NO/FREEZE — activation/deactivation of DP devices — Max. number of DP devices that can be activated/deactivated at the same time 	Point-to-point connection	No
Services - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes PROFIBUS DP master • Transmission rate, max. 12 Mbit/s • max. number of DP devices 124 Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes - S7 communication, as client No - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Equidistance Yes - Isochronous mode - SYNC/FREEZE Yes - activation/deactivation of DP devices Yes - max. number of DP devices that can be activated/ideactivated at the same time	MPI	
- PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master ● Transmission rate, max. 12 Mbit/s • max. number of DP devices - PG/OP communication - Routing - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time	Transmission rate, max.	12 Mbit/s
- Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - S7 communication, as server PROFIBUS DP master ■ Transmission rate, max. 12 Mbit/s ■ max. number of DP devices 124 Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time	Services	
Global data communication ST basic communication ST communication ST communication ST communication ST communication ST communication, as client ST communication, as server ST communication, as server ST communication, as server PROFIBUS DP master Transmission rate, max. ST communication Tansmission rate, max. Tal Mbit/s Tal	— PG/OP communication	Yes
- S7 basic communication Yes - S7 communication Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes PROFIBUS DP master • Transmission rate, max. 12 Mbit/s • max. number of DP devices 124 Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes; I blocks only - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices Yes - max. number of DP devices that can be activated/deactivated at the same time	— Routing	Yes
- S7 communication Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes PROFIBUS DP master • Transmission rate, max. 12 Mbit/s • max. number of DP devices 124 Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes; Or communication Yes; Or communication Yes - S7 communication Yes - S7 communication Yes - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time	 Global data communication 	Yes
- S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • max. number of DP devices - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time	 S7 basic communication 	Yes
— S7 communication, as server PROFIBUS DP master ● Transmission rate, max. ● max. number of DP devices 124 Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time	— S7 communication	Yes
PROFIBUS DP master Transmission rate, max. max. number of DP devices 124 Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time	 S7 communication, as client 	No; but via CP and loadable FB
 Transmission rate, max. max. number of DP devices 124 Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 124 124	— S7 communication, as server	Yes
 max. number of DP devices Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 	PROFIBUS DP master	
Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes - S7 communication Yes - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices Yes - max. number of DP devices that can be activated/deactivated at the same time	 Transmission rate, max. 	12 Mbit/s
 — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Loschronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 	max. number of DP devices	124
 Routing Global data communication S7 basic communication Yes; I blocks only S7 communication Yes S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE activation/deactivation of DP devices max. number of DP devices that can be activated/deactivated at the same time 	Services	
 Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE activation/deactivation of DP devices max. number of DP devices that can be activated/deactivated at the same time 	— PG/OP communication	Yes
- S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time Yes Yes Yes Yes Yes Yes 8 8	S	Yes
- S7 communication Yes - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - activation/deactivation of DP devices Yes - max. number of DP devices that can be activated/deactivated at the same time		
 — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time No Yes — yes — 8 8 8	 S7 basic communication 	Yes; I blocks only
 — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time Yes 9 8 8 8		
 Equidistance Isochronous mode SYNC/FREEZE activation/deactivation of DP devices max. number of DP devices that can be activated/deactivated at the same time 	•	
 — Isochronous mode — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 	 S7 communication, as server 	
 — SYNC/FREEZE — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 		Yes
 — activation/deactivation of DP devices — max. number of DP devices that can be activated/deactivated at the same time 		
— max. number of DP devices that can be activated/deactivated at the same time		
activated/deactivated at the same time		
Direct data exchange (slave-to-slave Yes; as subscriber		8
communication)		Yes; as subscriber
— DPV1 Yes	— DPV1	Yes
Address area	Address area	
— Inputs, max. 8 kbyte	— Inputs, max.	8 kbyte
— Outputs, max. 8 kbyte	— Outputs, max.	8 kbyte
User data per DP device	User data per DP device	
— Inputs, max. 244 byte	— Inputs, max.	244 byte
— Outputs, max. 244 byte	— Outputs, max.	244 byte

1at interface / DDOEIDHO DD double Harvala	
1st interface / PROFIBUS DP device / header	12 Mhit/o
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; with interface active
 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 communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	200 mA
Protocols	
• MPI	No
PROFINET IO Controller	No
PROFINET IO Device	No
PROFINET CBA	No
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes; A DP slave at both interfaces simultaneously is not possible
Open IE communication	No
Web server	No
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
max. number of DP devices	124
Services	
— PG/OP communication	Yes
	Yes
Routing Global data communication	
Global data communication S7 basic communication	No Voc: I blocks only
	Yes; I blocks only
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes; Connection configured on one side only
— Equidistance— Isochronous mode	Yes Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not
— SYNC/FREEZE	simultaneously) Yes
— activation/deactivation of DP devices	Yes 8
max. number of DP devices that can be activated/deactivated at the same time.	
activated/deactivated at the same time — Direct data exchange (slave-to-slave	Yes; as subscriber
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication)	
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1	Yes; as subscriber Yes
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area	Yes
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max.	Yes 8 kbyte
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max.	Yes
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max. User data per DP device	Yes 8 kbyte 8 kbyte
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max. User data per DP device — Inputs, max.	Yes 8 kbyte 8 kbyte 244 byte
activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max. User data per DP device	Yes 8 kbyte 8 kbyte

GSD file	The latest GSD file is available at: http://www.siemens.com/profibus-gsd
 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; with interface active
 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 communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
3. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
RJ 45 (Ethernet)	Yes
Number of ports	2
• integrated switch	Yes
Protocols	
• MPI	No
 PROFINET IO Controller 	Yes; Also simultaneously with I-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFINET CBA	Yes
 PROFIBUS DP master 	No
 PROFIBUS DP device 	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes
Maratia made made m	
Media redundancy	Yes
Media redundancy PROFINET IO Controller	Yes
·	Yes 100 Mbit/s
PROFINET IO Controller	
PROFINET IO Controller • Transmission rate, max.	
PROFINET IO Controller • Transmission rate, max. Services	100 Mbit/s
PROFINET IO Controller ■ Transmission rate, max. Services — PG/OP communication	100 Mbit/s Yes
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing — S7 communication	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — Shared device	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — Shared device — Prioritized startup	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max.	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — Shared device — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max.	Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — 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 Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256 64
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — 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	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256 64 64
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — 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 Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256 64 64 64 256
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — 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.	Yes Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256 64 64 64 256
PROFINET IO Controller ● Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Isochronous mode — 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 Yes Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Yes 32 256 64 64 64 256

activated/deactivated, max.	
 IO Devices changing during operation (partner 	Yes
ports), supported	
Number of IO Devices per tool, max.	8 V
Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs,1 ms; 2 ms, 4 ms (not in the case of IRT with "high flexibility" option)
— Updating time	250 µs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU
	31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data consistency, max.	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
— Isochronous mode	No
— ISOCITOTIONS Mode — IRT	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-
— I NOT leftergy	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. 	32
 Local port numbers used at the system end 	0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532,
Managelling for all an annual design	65533, 65534, 65535
• Keen-alive function supported	
Keep-alive function, supported	Yes
Protocols	
Protocols PROFIsafe	Yes
Protocols PROFIsafe Redundancy mode	
Protocols PROFIsafe Redundancy mode Media redundancy	Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ.	Yes 200 ms; PROFINET MRP
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max.	Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication	Yes 200 ms; PROFINET MRP 50
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006)	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max.	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 1 472 byte
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server • supported	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 1 472 byte Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server • supported • User-defined websites	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 1 472 byte Yes Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server • supported • User-defined websites • Number of HTTP clients	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 1 472 byte Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Data length for connection type 11H, max. • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server • supported • User-defined websites	Yes 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 32 1 460 byte 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 32 1 472 byte Yes Yes

Data record routing	Yes
Global data communication	
supported	Yes
Number of GD loops, max.	8
· · · · · · · · · · · · · · · · · · ·	8
Number of GD packets, max. Number of GD packets, transmitter, max.	
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
• supported	Yes
 User data per job, max. 	76 byte
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)
S7 communication	
supported	Yes
as server	Yes
as client	Yes; via integrated PROFINET interface and loadable FB or via CP and
	loadable FB
User data per job, max.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
S5 compatible communication	2. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.
• supported	Yes; via CP and loadable FC
communication functions / PROFINET CBA (with set target commu	
Setpoint for the CPU communication load	20 %
Number of remote interconnection partners	32
number of master/device functions	50
total of all master/device connections	3 000
 data length of all incoming master/device connections, max. 	24 000 byte
 data length of all outgoing master/device connections, max. 	24 000 byte
 Number of device-internal and PROFIBUS interconnections 	1 000
 Data length of device-internal und PROFIBUS interconnections, max. 	8 000 byte
Data length per connection, max.	1 400 byte
performance data / PROFINET CBA / remote interconnection	with acyclic transfer / header
 — Sampling interval, min. 	200 ms
 Number of incoming interconnections 	100
 Number of outgoing interconnections 	100
Data length of all incoming interconnections, max.	3 200 byte
Data length of all outgoing interconnections, max.	3 200 byte
data volume / as user data for remote interconnections / in the case of acyclic transmission /	1 400 byte
with PROFINET CBA / per connection / maximum	
performance data / PROFINET CBA / remote interconnection /	/ with cyclic transfer / header
 Transmission frequency: Transmission interval, min. 	1 ms
 Number of incoming interconnections 	300
 Number of outgoing interconnections 	300
 Data length of all incoming interconnections, max. 	4 800 byte
 Data length of all outgoing interconnections, max. 	4 800 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 PROF	INFT / acyclic / header
Number of stations that can log on for HMI variables (PN OPC/iMap)	3; 2x PN OPC/1x iMap
— HMI variable updating	500 ms
Number of HMI variables	600
— Data length of all HMI variables, max.	9 600 byte
performance data / PROFINET CBA / PROFIBUS proxy function	
— supported	Yes
 Number of linked PROFIBUS devices 	32

Number of connections • overall	 Data length per connection, max. 	240 byte; Slave-dependent
overall visable for PG communication		
		32
reserved for PG communication, min adjustable for OP communication, min adjustable for S7 basic communication, min adjustable for S7 communication, min		
adjustable for PG communication, min adjustable for PC communication reserved for OP communication adjustable for PC communication adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for SP basic communication adjustable for SP basic communication in adjustable for SP basic communication in adjustable for SP basic communication, min adjustable for SP basic communication, min adjustable for SP basic communication in adjustable for SP communication adjustable for SP com		
- adjustable for PC communication, max. • usable for OP communication - reserved for OP communication, min adjustable for OP communication, max. • usable for ST basic communication, max. • usable for ST basic communication, min adjustable for ST communication - adjustable for ST communication - adjustable for ST communication - reserved for ST communication - adjustable for ST communication, min adjustable for ST communication, max. • total inumber of instances, max. • usable for for toting X1 as MPI: max. 10: X1 as DP master: max. 24: X1 as DP slave (active): max 44; X2 as DP master: max. 24; X2 as DP slave (active): max 44; X2 as DP master: max. 24; X2 as DP slave (active): max 44; X2 as DP master: max. 24; X2 as DP slave (active): max 44; X2 as DP master: max. 24; X2 as DP slave (active): max 44; X2 as DP master: max. 24; X2 as DP slave (active): max 44; X2 as DP slave (active): max 45; X2 as DP slave (active): max 46; X2 as DP slave (active): max 47; X2 as DP slave (active): max 48; X2 as DP slave (active): max 49; X2 as DP slave (active): max 40; X4 as MPI: max. 10; X1 as MPI: max. 10; X1 as MPI: max. 1		
usable for OP communication	•	
- reserved for OP communication, min adjustable for OP communication, max. • usable for ST basic communication - reserved for ST basic communication - adjustable for ST basic communication - adjustable for ST basic communication, min adjustable for ST communication, max. • total number of instances, max. • total number of instances, max. • total number of instances, max. • total number of instances, max. • total number of instances, max. • total number of instances, max. • total number of productions ST message functions Number of login stations for message functions, max. ST message functions ST message	•	
adjustable for OP communication, min adjustable for SP Desic communication, max. server for S7 basic communication reserved for S7 communication adjustable for S7 basic communication, min adjustable for S7 basic communication, max. subsible for S7 basic communication, max. subsible for S7 basic communication, max. subsible for S7 communication adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, max. subsible for routing		
- adjustable for OP communication, max. • usable for ST basic communication - adjustable for ST basic communication, min. - adjustable for ST communication fin. -		
usable for \$7 basic communication adjustable for \$7 basic communication, min. adjustable for \$7 basic communication, min. adjustable for \$7 basic communication, max. usable for \$7 communication reserved for \$7 communication adjustable for \$7 communication reserved for \$7 communication reserved for \$7 communication, min. adjustable for \$7 communication, min. adjustable for \$7 communication, max. total number of instances, max. usable for routing \$1 to \$2 to \$2 to \$2 to \$3 to \$4	•	
- reserved for S7 basic communication - adjustable for S7 basic communication, max. • usable for S7 communication, max. • usable for S7 communication - reserved for S7 communication, max. • usable for S7 communication, min. - adjustable for S7 communication, min. - adjustable for S7 communication, min. - adjustable for S7 communication, max. • total number of instances, max. • total number of instances, max. • usable for routing S7 message functions S7 message functions S87 message functions S97 message functions Number of login stations for message functions, max. - Process diagnostic messages - Yes - Simultaneously active Alarm-S blocks, max. - Status block - Status Control variable • Variables • Variables • Number of translables, max. - of which status variables, max. - of which status variables, max. - of which control variables, max. - of which powerfail-proof • Number of entries, max. - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Number of entries readable in RUN, max - adjustable - of which powerfail-proof • Or which powerfail-proof • Or which powerfail-proof •		
- adjustable for S7 basic communication, min adjustable for S7 basic communication, max. subside for S7 communication - reserved for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, min adjustable for S7 communication, max. stotal number of instances, max. subside for routing - variable for routing - variables - variable		
- adjustable for S7 basic communication max. • usable for S7 communication 16 - reserved for S7 communication 0 - adjustable for S7 communication, min. - adjustable for S7 communication, min. 16 - total number of instances, max. 15 • usable for routing X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as DP naster: max. 24; X2 as DP slave (active): max. 14; X2 as DP naster: max. 24; X2 as DP slave (active): max. 14; X2 as DP naster: max. 24; X2 as DP slave (active): max. 14; X3 as PROFINET: 48 max. S7 message functions Number of login stations for message functions, max. 32; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 300 Test commissioning functions S1 status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 S1 status/control S1 status/control variables Yes Number of variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 30 Forcing Forcing, variables, max. 10 Diagnostic buffer • present Yes • Number of variables, max. 500 • Number of retries, max. 500 • Number of entries, max. 500 • Number of entries, max. 500 • Number of entries, max. 499 - preset 10 Service data • can be read out Yes Ambient conditions Ambient conditions Ambient conditions Ambient conditions		
usable for S7 communication reserved for S7 communication adjustable for S7 communication, min. adjustable for S7 communication, min. total number of instances, max. usable for routing S7 message functions Number of login stations for message functions, max. 23 2 32; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 30 30 30 30 30 30 30 30 30 30 30 30 30 3	•	
- reserved for S7 communication - adjustable for S7 communication, min adjustable for S7 communication, max. • total number of instances, max. • usable for routing X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as DP master: max. 24; X2 as DP slave (active): max. 14; X3 as PROFINET: 48 max. S7 message functions Number of login stations for message functions, max. Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 7 stat commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 status/control variable • Variables • Number of variables, max of which status variables, max of which control variables, max of which control variables, max. 10 Diagnostic buffer • present • Procing • Forcing, variables, max adjustable • Number of entries, max adjustable • Number of entries, max adjustable - of which powerfail-proof • Number of entries readable in RUN, max adjustable - preset - and present - preset - pr	•	
adjustable for S7 communication, min adjustable for S7 communication, max. 16 adjustable for S7 communication, max. 16 total number of instances, max. 22 usable for routing 23 usable for routing 32 X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as DP slave functions 87 message functions 87 message functions Number of login stations for message functions, max. 23.2 Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages simultaneously active Alarm-S blocks, max. 300 7 est commissioning functions Status block 9 yes; Up to 2 simultaneously Single step 1 yes Number of breakpoints 4 Status/control variable • Variables • Number of variables, max of which status variables, max of which control variables, max of which control variables, max. 14 Forcing • Forcing • Forcing • Forcing, variables • Number of variables, max. 10 Diagnostic buffer • present • Number of entries, max adjustable - of which powerial-proof • Number of entries readable in RUN, max adjustable - preset - preset - 10 Service data • can be read out - Ambient conditions		
- 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 Process diagnostic descriptions Process diagnostic messages Process diagnostic descriptions Process diagnostic descriptions Process diagnostic messages Process diagnostic descriptions Process diagnostic messages Process diagnostic descriptions Process diagnostic messag		
• total number of instances, max. • usable for routing ** usable for routing ** X1 as MPI: max. 10; X1 as DP master: max. 24; X2 as DP slave (active): max. 14; X2 as DP master: max. 24; X2 as DP slave (active): max. 14; X3 as PROFINET: 48 max. **S7 message functions **Number of login stations for message functions, max. **Process diagnostic messages** **Yes** **Jumber of login stations for messages** **Yes** **Jumber of broakpoints** **Status Slook** **Status Slook** **Status Slook** **Status Slook** **Status/control variable** **Status/control variable** **Status/control variables** **Number of broakpoints** **Status/control variables** **Number of variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. - of which control variables, max. **Forcing** **Forcing** **Forcing** **Forcing, variables** **Number of variables, max. 10 **Diagnostic buffer** **present** **Number of entries, max. - of which powerfail-proof** **Number of entries readable in RUN, max. - adjustable** - preset** **Number of entries readable in RUN, max. - preset** **Number of entries readable in RUN, max. - adjustable** - preset** **Number of entries readable in RUN, max. - preset** **Number of entries readable in RUN, max. - adjustable** - preset** **Number of entries readable in RUN, max. - adjustable** - preset** **Diagnostic data** - can be read out Australables** **Ambient conditions** **Am	•	
Usable for routing X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as DP master: max. 24; X2 as DP slave (active): max. 14; X3 as PROFINET: 48 max. With the configured connections for PG/OP and S7 basic communication Process diagnostic messages Simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control Status/control Status/control variables Number of variables, max. of which status variables, max. of which control variables, max. 14 Forcing Forcing Forcing, variables, max. 10 Diagnostic buffer present Number of entries, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - preset - preset - preset - can be read out - Ambient conditions Ambient temperature during operation	•	
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Ambient conditions Ambient temperature during operation		
Ambient temperature during operation		Yes
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	• min.	0 °C
• max. 60 °C		6U °C
configuration / header		
Configuration software	· ·	Van VE E ankinkan
• STEP 7 Yes; V5.5 or higher		Yes; V5.5 or higher
configuration / programming / header		and instruction list
Command set see instruction list	• 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.	1 250 g

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