SIEMENS

Data sheet

6ES7318-3EL01-0AB0



SIMATIC S7-300 CPU 319-3 PN/DP, Central processing unit with 2 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave 3rd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

General information	
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
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
²t	1.2 A ² ·s
Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
integrated	2 048 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
for floating point arithmetic, typ.	0.04 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	
• 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 (OB 35: smallest settable clock pulse = 500 μs)
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
Number of startup OBs	1; OB 100
 Number of asynchronous error OBs 	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
 per priority class 	16
 additional within an error OB 	4
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
	Vec
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
Data 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
-	MB 0 to MB 15
Retentivity preset	
Number of clock memories	8; 1 memory byte
Data blocks	
 Retentivity adjustable 	Yes; via non-retain property on DB

Retentivity preset Local data	
Loodi data	Yes
 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	256 byte
Outputs, default	256 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	4
Number of operable FMs and CPs (recommended)	
Number of operable FMs and CPs (recommended) FM 	8
	8 8
• FM	
FMCP, PtP	8
• FM • CP, PtP • CP, LAN	8
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. 	8 10
 FM CP, PtP CP, LAN Rack Racks, max. 	8 10 4
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. 	8 10 4
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) 	8 10 4
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock	8 10 4 8
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time 	8 10 4 8 8 Ves Yes 6 wk; At 40 °C ambient temperature
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period 	8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number range 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number range Range of values 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101)
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity 	8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity retentive 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101)
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity retentive 	8 10 4 8 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported to MPI, master 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number/Number range Range of values Granularity retentive Clock synchronization supported to MPI, master on MPI, device 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes Yes
 FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max. Behavior of the clock following POWER-ON Behavior of the clock following expiry of backup period Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported to MPI, master 	8 10 4 8 7 Yes 6 wk; At 40 °C ambient temperature 10 s; Typ.: 2 s Clock continues running after POWER OFF the clock continues at the time of day it had when power was switched off 4 0 to 3 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes

• in AS. master	Yes
 In AS, master in AS, device 	Yes
on Ethernet via NTP	Yes; As client
Digital inputs	
Number of digital inputs	0
Digital outputs	0
Number of digital outputs	0
Analog inputs	0
Number of analog inputs	0
Analog outputs	·
Number of analog outputs	0
Interfaces	•
Number of industrial Ethernet interfaces	1; 2 ports (switch) RJ45
Number of PROFINET interfaces	1; 2 ports (switch) RJ45
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	150 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes; A DP slave at both interfaces simultaneously is not possible
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
- Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server PROFIBUS DP master	Yes
Transmission rate, max.	12 Mbit/s
max. number of DP devices	124
Services	127
— PG/OP communication	Yes
- Routing	Yes
Global data communication	No
— S7 basic communication	Yes; I blocks only
- S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	No
- SYNC/FREEZE	Yes
- activation/deactivation of DP devices	Yes
 max. number of DP devices that can be activated/deactivated at the same time 	8
— Direct data exchange (slave-to-slave communication)	Yes; as subscriber
- DPV1	Yes
Address area	9 khuta
— Inputs, max. — Outputs, max.	8 kbyte 8 kbyte
PROFIBUS DP slave	

- Transmission rate, may	12 Mbit/s
Transmission rate, max.	
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	Yes
communication) — DPV1	Na
	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
— Routing	Yes
- Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes
- S7 communication, as client	No
— S7 communication, as server	Yes; Connection configured on one side only
— Equidistance	Yes
— Isochronous mode	Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not
	simultaneously)
- SYNC/FREEZE	Yes
 activation/deactivation of DP devices 	Yes
 max. number of DP devices that can be activated/deactivated at the same time 	8
 — Direct data exchange (slave-to-slave communication) 	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• 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 byte Services - PC/OP communication Yes; - PC/OP communication Yes; with interface active - Global data communication No - S7 communication Yes; - S7 communication, as server Yes; Connection configured on one side only - S7 communication, as server Yes; Connection configured on one side only - Direct data exchange (slave-to-slave communication) 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 Solited Yes automatic detection of transmission rate Yes; 10/100 Mbit/s Autorossing Yes Change of IP address at runtime, supported Yes Interface types Yes • RV 45 (Ethernet) Yes • No Yes Proce/INET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Device Yes; Also simultaneously with I-Device functionality <th> automatic baud rate search Address area, max. User data per address area, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports </th> <th>Yes; only with passive interface 32 32 byte Yes Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes</th>	 automatic baud rate search Address area, max. User data per address area, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes; only with passive interface 32 32 byte Yes Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
• 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 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 Stateface Yes automatic detection of transmission rate Yes; 10/100 Mbit/s Autocrossing Yes Change of IP address at runtime, supported Yes Interface type Ferentel • RJ 45 (Elternet) Yes • Number of ports 2 • Interface stype Yes • RJ 45 (Elternet) Yes • RPOFINET IO Controller Yes, Also simultaneously with I-Device functionality • PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Device Yes; A	 Address area, max. User data per address area, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface type Isolated automatic detection of transmission rate Autoressing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	32 32 byte Yes Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
• User data per address area, max. 32 byte Services - - PG/OP communication Yes - Global data communication No - S7 basic communication No - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - S7 communication, as server Yes; Connection configured on one side only - DFort data exchange (slave-to-slave communication) Yes - DPV1 No Transfer memory - - Inputs 244 byte - Outputs 244 byte Sinterface PROFINET Isolated Yes automatic detection of transmission rate Yes / 10/100 Mbit/s Autoregotiation Yes • RJ 45 (Ehrent) Yes • Number of ports 2 • Interface types Yes • RJ 45 (Ehrent) Yes • Number of ports 2 • Interface types Yes • PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Controller Yes; Also simultaneously with IO Contro	 User data per address area, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Interface Interface type Isolated automatic detection of transmission rate Autoressing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	32 byte Yes Yes; with interface active No No Yes; Connection configured on one side only Yes No Yes No PROFINET Yes Yes
Services - - PG/OP communication Yes, with interface active - Global data communication No - S7 basic communication No - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - S7 communication, as server Yes; Connection configured on one side only - Direct data exchange (slave-to-slave communication) Yes - DIPV1 No Transfer memory - - - Interface type PROFINET Isolated Yes automatic detection of transmission rate Yes; 10/100 Mbit/s Autocrossing Yes Change of IP address at runtime, supported Yes Interface types - • Interface types - • Number of ports 2 • integ	Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 Transfer memory - Inputs - Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autorossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte 244 byte 245 Yes Yes Yes Yes Yes Yes Yes Yes
	 PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autorossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte Yes No Yes
- RoutingYes; with interface active- Global data communicationNo- S7 basic communicationNo- S7 communication, as clientNo- S7 communication, as clientNo- S7 communication, as serverYes; Connection configured on one side only- Direct data exchange (slave-to-slave communication)Yes- DPV1No- DPV1NoTransfer memory Inputs244 byte- Outputs244 byte- OutputsYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutorcosingYesAutorcosingYes- RJ 45 (Ethemet)Yes- Number of ports2- Number of ports2- Number of ports2- NMPINo- PROFINET IO ControllerYes; Also simultaneously with I-Device functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality- P	 Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autorossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes; with interface active No No Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte Yes No Yes
- Global data communication No - S7 basic communication No - S7 communication Yes - S7 communication, as client No - Direct data exchange (slave-to-slave communication) Yes - DPV1 No Transfer memory - - Inputs 244 byte - Outputs 244 byte 3 Interface PROFINET Isolated Yes automatic detection of transmission rate Yes; 10/100 Mbit/s Autoegotiation Yes Autoegotiation Yes - R0 J45 (Ethernet) Yes • Number of ports 2 • Number of ports 2 • integrated switch Yes PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Controller Yes; Also simultaneously with IO Controller functionality • PROFINET IO Controller Yes;	 Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	No No Yes No Yes; Connection configured on one side only Yes No Yes No PROFINET Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes
	 S7 basic communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autorossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	No Yes No Yes; Connection configured on one side only Yes No Yes No PeroFINET Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes
	 S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autoregotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte 245 Yes Yes Yes Yes Yes Yes Yes Yes
	 S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autoregotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	No Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte Yes PROFINET Yes; 10/100 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes
	 S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 Transfer memory Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes; Connection configured on one side only Yes No 244 byte 244 byte 244 byte Yes PROFINET Yes; 10/100 Mbit/s Yes
Direct data exchange (slave-to-slave communication)Yes DPV1NoTransfer memory244 byte Inputs244 byte Outputs244 byte3. InterfaceYesInterface typePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutoregotiationYesAutorossingYesChange of IP address at runtime, supportedYesInterface typesYes• RJ 45 (Ethermet)Yes• Interface types2• Interface types2• Interface types2• Number of ports2• Interface typeYes• NPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	 — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	Yes No 244 byte 244 byte 244 byte 244 byte 245 Yes Yes Yes Yes Yes Yes Yes
communication)NoDPV1NoTransfer memory244 byteInputs244 byteOutputs244 byte3. InterfacePROFINETInterface typePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutoregotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface type• RJ 45 (Ethernet)Yes• Integrated switchYes• Interface type2• integrated switchYes• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET IC DBAYes	communication) — DPV1 Transfer memory — Inputs — Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	No 244 byte 244 byte 244 byte 748 748 748 748 748 748 748 748 748 748
DPV1NoTransfer memory244 byteInputs244 byteOutputs244 byteS. InterfaceInterface typePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutoregotiationYesAutorossingYesChange of IP address at runtime, supportedYesInterface typesYes• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes; Also simultaneously with IO Controller functionality	- DPV1 Transfer memory - Inputs - Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	244 byte 244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes
Transfer memory- Inputs244 byte- Outputs244 byte3. InterfaceInterface typePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutonegotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesYesInterface types2interface types2integrated switchYesProtocolsVes• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	Transfer memory — Inputs — Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	244 byte 244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes Yes
Inputs244 byte Outputs244 byte3. InterfacePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutonegotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface types	 Inputs Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types RJ 45 (Ethernet) Number of ports 	244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
Outputs244 byte3. InterfaceInterface typePROFINETIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutonegotiationYesAutoregotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesYes• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsYes; Also simultaneously with I-Device functionality• PROFINET IO ControllerYes; Also simultaneously with IO Controller functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET IC CANTOLLERYes; Also simultaneously with IO Controller functionality• PROFINET IC CANTOLLERYes; Also simultaneously with IO Controller functionality• PROFINET IC CANTOLLERYes; Also simultaneously with IO Controller functionality• PROFINET IC CANTOLLERYes; Also simultaneously with IO Controller functionality• PROFINET IC CANTOLLERYes; Also simultaneously with IO Controller functionality• PROFINET IC CBAYes	Outputs 3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	244 byte PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
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 Yes • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols No • MPI No • PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Device Yes; Also simultaneously with IO Controller functionality • PROFINET IC Device Yes; Also simultaneously with IO Controller functionality • PROFINET CBA Yes	3. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	PROFINET Yes Yes; 10/100 Mbit/s Yes Yes Yes
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 Yes • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols No • MPI No • PROFINET IO Controller Yes; Also simultaneously with I-Device functionality • PROFINET IO Device Yes; Also simultaneously with IO Controller functionality • PROFINET TO Device Yes; Also simultaneously with IO Controller functionality • PROFINET CBA Yes	Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes Yes; 10/100 Mbit/s Yes Yes Yes
IsolatedYesIsolatedYesautomatic detection of transmission rateYes; 10/100 Mbit/sAutonegotiationYesAutocrossingYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesYes• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsYes• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	Isolated automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes Yes; 10/100 Mbit/s Yes Yes Yes
automatic detection of transmission rateYes; 10/100 Mbit/sAutonegotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesInterface types• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsInterface types• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET IC CBAYes	automatic detection of transmission rate Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes; 10/100 Mbit/s Yes Yes Yes
AutonegotiationYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesYes• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsYes• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET IC DAYes; Also simultaneously with IO Controller functionality• PROFINET IC DAYes	Autonegotiation Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes Yes Yes
AutocrossingYesAutocrossingYesChange of IP address at runtime, supportedYesInterface typesInterface types• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocolsYes• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	Autocrossing Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes Yes
Change of IP address at runtime, supported Yes Interface types • • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols Yes • 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	Change of IP address at runtime, supported Interface types • RJ 45 (Ethernet) • Number of ports	Yes
Interface types• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocols• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	Interface types • RJ 45 (Ethernet) • Number of ports	
• RJ 45 (Ethernet)Yes• Number of ports2• integrated switchYesProtocols• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes	RJ 45 (Ethernet)Number of ports	
Number of ports Number of ports Number of ports Protocols PROFINET IO Controller PROFINET IO Device PROFINET IO Device PROFINET CBA	Number of ports	
• integrated switch Yes Protocols No • 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	-	
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		
• MPINo• PROFINET IO ControllerYes; Also simultaneously with I-Device functionality• PROFINET IO DeviceYes; Also simultaneously with IO Controller functionality• PROFINET CBAYes		Yes
 PROFINET IO Controller PROFINET IO Device PROFINET CBA Yes; Also simultaneously with IO Controller functionality Yes 		
PROFINET IO Device Yes; Also simultaneously with IO Controller functionality PROFINET CBA Yes		
PROFINET CBA Yes	PROFINET IO Controller	
	PROFINET IO Device	
PROFIBUS DP master No	PROFINET CBA	Yes
	PROFIBUS DP master	No
PROFIBUS DP device No	PROFIBUS DP device	No
Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP	Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server Yes	Web server	Yes
Media redundancy Yes	Media redundancy	Yes
PROFINET IO Controller	PROFINET IO Controller	
• Transmission rate, max. 100 Mbit/s	Transmission rate, max.	100 Mbit/s
Services	Services	
- PG/OP communication Yes	— PG/OP communication	Yes
- Routing Yes	— Routing	Yes
- S7 communication Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32	— S7 communication	instances: 32
simultaneously)		Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
- Shared device Yes	— Shared device	Yes
- Prioritized startup Yes	— Prioritized startup	Yes
- Number of IO devices with prioritized startup, max. 32	 Number of IO devices with prioritized startup, max. 	32
- Number of connectable IO Devices, max. 256	 Number of connectable IO Devices, max. 	256
- Of which IO devices with IRT, max. 64	- Of which IO devices with IRT, max.	64
— of which in line, max. 64	— of which in line, max.	64
— Number of IO Devices with IRT and the option "high flexibility" 256		256
- of which in line, max. 61	— of which in line, max.	61
- Number of connectable IO Devices for RT, max. 256	 — Number of connectable IO Devices for RT, max. 	256
— of which in line, max. 256		256
- Activation/deactivation of IO Devices Yes		
— Number of IO Devices that can be simultaneously activated/deactivated, max.		

 IO Devices changing during operation (partner ports), supported 	Yes
— Number of IO Devices per tool, max.	8
-	
— Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs,1 ms; 2 ms, 4 ms (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
— 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.	32
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
 Keep-alive function, supported 	Yes
Protocols	
PROFIsafe	No
Redundancy mode	
Media redundancy	
— Switchover time on line break, typ.	200 ms; PROFINET MRP
— Number of stations in the ring, max.	50
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	32
 — Number of connections, max. — Data length for connection type 01H, max. 	32 1 460 byte
— Data length for connection type 11H, max.	32 768 byte
— several passive connections per port, supported	Yes
ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
— Number of connections, max.	32 20 700 http
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	32
— Data length, max.	1 472 byte
Web server	
 supported 	Yes
 User-defined websites 	Yes
Number of HTTP clients	5
communication functions / header	
PG/OP communication	Yes

Data record routing	Yes
Global data communication	
	Yes
supported	
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
• Size of GD packets, max.	22 byte
• Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
• 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	
supported	Yes; via CP and loadable FC
communication functions / PROFINET CBA (with set target commu	nication load) / header
 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	with evelie transfer / header
performance data / PROFINET CBA / remote interconnection /	
— 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	INET / 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

— Data length per connection, max.	240 byte; Slave-dependent
Number of connections	
• overall	32
usable for PG communication	31
— reserved for PG communication	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	31
usable for OP communication	31
 reserved for OP communication 	1
 — adjustable for OP communication, min. 	1
— adjustable for OP communication, max.	31
usable for S7 basic communication	30
 — reserved for S7 basic communication 	0
— adjustable for S7 basic communication, min.	0
 adjustable for S7 basic communication, max. 	30
usable for S7 communication	16
- reserved for S7 communication	0
- adjustable for S7 communication, min.	0
adjustable for S7 communication, min. adjustable for S7 communication, max.	16
-	32
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.	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	
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	
Forcing	Yes
• Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	500
— adjustable	No
— of which powerfail-proof	100
 Number of entries readable in RUN, max. 	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
 can be read out 	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0°C
• max.	60 °C
configuration / header	
Configuration software	
STEP 7	Yes; V5.5 or higher
configuration / programming / header	
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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