SIEMENS

Data sheet

6ES7317-2AK14-0AB0

SIMATIC S7-300, CPU 317-2 DP, Central processing unit with 1 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave Micro Memory Card required



General information	
HW functional status	01
Firmware version	V3.3
Engineering with	
 Programming package 	STEP 7 as of V5.5 + SP1 or STEP 7 V5.2 + SP1 or higher with HSP 202
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
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)	870 mA

Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
l²t	1 A ² ·s
Power loss Power loss, typ.	4.5 W
rower loss, typ.	4.5 W
Memory	
Work memory	
• integrated	1 024 kbyte
• expandable	No
 Size of retentive memory for retentive data blocks 	256 kbyte
Load memory	
• Plug-in (MMC)	Yes
 Plug-in (MMC), max. 	8 Mbyte
 Data management on MMC (after last programming), min. 	10 у
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times for bit operations, typ.	0.025 μs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 µs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
 Number, max. 	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Description	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	1; OB 10

 Number of delay alarm OBs 	2; OB 20, 21
 Number of cyclic interrupt OBs 	4; OB 32, 33, 34, 35
 Number of process alarm OBs 	1; OB 40
 Number of DPV1 alarm OBs 	3; OB 55, 56, 57
 Number of isochronous mode OBs 	1; OB 61
 Number of startup OBs 	1; OB 100
 Number of asynchronous error OBs 	5; OB 80, 82, 85, 86, 87
 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	540
• Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— 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	

I/O address area• Inputs8 192 byte• Outputs8 192 byteof which distributed8 192 byte Inputs8 192 byte Outputs8 192 byteProcess image8• Inputs8 192 byte• Inputs8 192 byte• Outputs8 192 byte• Outputs8 192 byte• Outputs8 192 byte• Outputs8 192 byte• Outputs, adjustable8 192 byte• Outputs, adjustable8 192 byte• Outputs, default256 byte• Outputs, default256 byte• Number of subprocess images, max.1		
• Number, max.4 096 byte• Retentivity availableYes; From MB 0 to MB 4 095• Retentivity presetMB 0 to MB 15• Number of clock memories8; 1 memory byteData blocks• Retentivity adjustableYes; via non-retain property on DB• Retentivity presetYesLocal data• per priority class, max.32 768 byte; Max. 2048 bytes per blockAddress areaI/O address area• Inputs8 192 byte• Outputs8 192 byte• Outputs8 192 byte• Duputs8 192 byte• Inputs8 192 byte• Outputs8 192 byte• Outputs8 192 byte• Inputs8 192 byte• Outputs8 192 byte• Outputs, adjustable8 192 byte• Outputs, adjustable8 192 byte• Outputs, default256 byte• Outputs, default256 byte• Outputs, default256 byte• Number of subprocess images, max.1		All, max. 256 KB
• Retentivity availableYes; From MB 0 to MB 4 095• Retentivity presetMB 0 to MB 15• Number of clock memories8; 1 memory byteData blocks- Retentivity adjustableYes; via non-retain property on DB• Retentivity presetYesLocal data- per priority class, max.32 768 byte; Max. 2048 bytes per block- Number of clock bytes8 192 byte• Joutputs8 192 byte• Outputs8 192 byte• Outputs, adjustable8 192 byte• Outputs, adjustable8 192 byte• Outputs, adjustable8 192 byte• Outputs, default256 byte• Outputs, default256 byte• Outputs, default256 byte• Number of subprocess images, max.1		
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• Inputs, default 256 byte • Outputs, default 256 byte Subprocess images 256 byte • Number of subprocess images, max. 1	 Inputs, adjustable 	8 192 byte
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• Outputs, default256 byteSubprocess images1	 Inputs, default 	256 byte
Subprocess images • Number of subprocess images, max.	Outputs, default	256 byte
	 Number of subprocess images, max. 	1
Digital channels	Digital channels	
• Inputs 65 536	Inputs	65 536
— of which central 1 024	— of which central	1 024
Outputs 65 536		65 536
— of which central 1 024		1 024
Analog channels		
• Inputs 4 096		4 096
— of which central 256		
• Outputs 4 096		
- of which central 256		
Hardware configuration	Hardware configuration	
Number of expansion units, max. 3		3
Number of DP masters	Number of DP masters	
• integrated 2	• integrated	2

● via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
● 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 	Clock continues to run with the time at which the power failure occurred
Operating hours counter	
Number	4
 Number/Number range 	0 to 3
 Range of values 	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
● to MPI, master	Yes
● to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
● to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
 on Ethernet via NTP 	No
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0

Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
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
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Protocols	
● MPI	Yes
 PROFIBUS DP master 	Yes
PROFIBUS DP slave	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; Only server, configured on one side
— 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
 Number of DP slaves, max. 	124
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	No
- SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes

→ Number of DP slaves that can be 8 = Direct data exchange (slave-to-slave communication) Yes; As subscriber → DPV1 Yes Address area 8 → Outputs, max. 8 > Outputs, max. 8 > Outputs, max. 8 > Outputs, max. 244 byte PROFIBUS DP slave 12 Mbit/s • 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 - - PGOP communication No - S7 communication No - S7 communication Yes; Only server, configured on one side - S7 communication Yes - Direct data exchange (slave-to-slave communication) No - S7 communication Yes - Direct data exchange (slave-to-slave communication) No - S7 communication Yes - Direct data exchange (slave-to-slave communication) No - Direct data exchange (slave-to-slave communication) - Direct data exchange (slave-to-slave co		•
- Direct data exchange (slave-to-slave communication) Yes; As subscriber - DPV1 Yes Address area - - Inputs, max. 8 kbyte - Outputs, max. 8 kbyte - Outputs, max. 244 byte - Outputs, max. 32 - automatic baud rate search Yes; only with passive interface - Address area, max. 32 - Services - - PG/OP communication Yes - Routing Yes: Only with active interface - Global data communication No - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - Direct data exchange (slave-to-slave communication) Yes - Direct data exchange (slave-to-slave communication) No - Duty1 No	 Number of DP slaves that can be simultaneously activated/deactivated_max 	8
communication) Yes Address area 8 kbyte - Inputs, max. 8 kbyte - Outputs, max. 8 kbyte User data per DP slave 244 byte - Outputs, max. 244 byte - Outputs, max. 244 byte PROFIBUS DP slave 244 byte Protoputs, max. 244 byte PROFIBUS DP slave 12 Mbit/s - Transmission rate, max. 12 Mbit/s - automatic baud rate search 2 a - Address area, max. 32 Services - - Routing Yes; Only with active interface - Routing Yes; Only server, configured on one side - S7 communication No - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - Outputs 244 byte - Direct data exchange (slave-to-slave communication configured on one side only - Direct data exchange (slave-to-slave communication configured on one side only - Direct data exchange (slave-to-slave communication configured on one side only - Direct data exch	•	Yes: As subscriber
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	— DPV1	Yes
- Outputs, max. 8 kbyte User data per DP slave 244 byte - Inputs, max. 244 byte - Outputs, max. 244 byte PROFIBUS DP slave 12 Mbit/s • 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 • Global data communication Yes - Routing Yes; Only with active interface - Global data communication No - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - Direct data exchange (slave-to-slave communication) No - Direct data exchange (slave-to-slave communication) No - Direct data exchange (slave-to-slave communication) Yes - Outputs 244 byte 20 Unputs 244 byte Power supply to interface (15 to 30 V DC), max. 200 mA Protecols Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously i	Address area	
User data per DP slave 244 byte - Inputs, max. 244 byte PROFIBUS DP slave 244 byte * 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: Only with active interface - Global data communication No - S7 basic communication Yes: Only server, configured on one side - S7 communication Yes: Only server, 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; - DPV1 No Transfer memory 244 byte - Outputs 244 byte 2 Uterface Integrated RS 485 interface Physics Stas Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protecols Yes; A DP slave	— Inputs, max.	8 kbyte
Inputs, max. 244 byte Outputs, max. 244 byte PROFIBUS DP slave 244 byte • 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 Services - - PG/OP communication Yes; - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only with active interface - S7 communication, as client No - S7 communication, as client No - Direct data exchange (slave-to-slave communication) Yes; Connection configured on one side only - DPV1 No Transfer memory - - Inputs 244 byte - Outputs 244 byte 2 Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Yes; ADP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; ADP slave at both interfaces simultaneously is not possible • Point-to-point	— Outputs, max.	8 kbyte
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PROFIBUS DP slave • Transmission rate, max. 12 Mbit/s • automatic baud rate search 22 models area, max. • automatic baud rate search 32 • User data per address area, max. 32 • Services • PG/OP communication Yes; Only with active interface • Global data communication No • S7 basic communication No • S7 communication, as client No • S7 communication, as client No • Direct data exchange (slave-to-slave communication) No • Direct data exchange (slave-to-slave communication) Ves; Connection configured on one side only • Direct data exchange (slave-to-slave communication) PoV1 • Direct data exchange (slave-to-slave communication) PoV1 • Diret data exchange (slave-to-slave communication) Pover • Diret data exchange (slave-to-slave Yes • Outputs	— Inputs, max.	244 byte
• 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; Only with active interface - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - S7 communication, as client No - S7 communication, as server Yes; Connection configured on one side only - Direct data exchange (slave-to-slave communication) No - Direct data exchange (slave-to-slave communication) No - Duputs 244 byte 2. Interface Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Yes • MPI No • PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP master Yes <t< td=""><td>— Outputs, max.</td><td>244 byte</td></t<>	— Outputs, max.	244 byte
National basisYes: only with passive interface• Address area, max.32• User data per address area, max.32 byteServices PG/OP communicationYes: Only with active interface- Global data communicationNo- S7 basic communicationNo- S7 communication, as clientNo- S7 communication, as serverYes: Only server, configured on one side- S7 communication, as clientNo- S7 communication, as serverYes: Connection configured on one side only- Direct data exchange (slave-to-slave communication)Yes- DPV1NoTransfer memory244 byte- Outputs244 byte244 byte- OutputsRS 485IsolatedYesPower supply to interface (15 to 30 V DC), max.200 mAProtocolsYes• PROFIBUS DP masterYes• Protocols <t< td=""><td>PROFIBUS DP slave</td><td></td></t<>	PROFIBUS DP slave	
• Address area, max.32• User data per address area, max.32 byteServices PG/OP communicationYes- RoutingYes; Only with active interface- Global data communicationNo- S7 basic communicationNo- S7 communication as clientNo- S7 communication, as serverYes; Conly server, configured on one side only- S7 communication, as serverYes; Connection configured on one side only- S7 communication, as serverYes; Connection configured on one side only- DFV1NoTransfer memoryYes- Inputs244 byte- Outputs244 byteInterface typeIntegrated RS 485 interfacePhysicsRS 485IsolatedYesPower supply to interface (15 to 30 V DC), max.200 mAProtocolsYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible	 Transmission rate, max. 	12 Mbit/s
• User data per address area, max. 32 byte Services - - PG/OP communication Yes - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - 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 - DPV1 No Transfer memory - - Inputs 244 byte - Outputs 244 byte Poutputs RS 485 Isolated Yes Physics RS 485 Isolated Yes • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	 automatic baud rate search 	Yes; only with passive interface
Services - PG/OP communication Yes - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - S7 communication, as client No - 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 244 byte - Outputs 244 byte 2. Interface Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Yes • MPI No • PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No	 Address area, max. 	32
- PG/OP communication Yes - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - S7 communication, as client No - 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 244 byte - Outputs 244 byte - Outputs 244 byte Physics RS 485 Isolated Yes Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Ves • MPI No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No	• User data per address area, max.	32 byte
- Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - 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 - DPV1 No Transfer memory 244 byte - Outputs 244 byte 2 Interface Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	Services	
	— PG/OP communication	Yes
	— Routing	Yes; Only with active interface
	— Global data communication	No
	— S7 basic 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 244 byte - Outputs 244 byte 2 Interface Xes; Connection configured on one side only Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Yes • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	— S7 communication	Yes; Only server, configured on one side
- Direct data exchange (slave-to-slave communication) Yes - DPV1 No Transfer memory 244 byte - Outputs 244 byte 2 Interface 244 byte Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Ves • MPI No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	— S7 communication, as client	No
communication) No - DPV1 No Transfer memory 244 byte - Outputs 244 byte 2 Interface 244 byte Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Ves • MPI No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	- S7 communication, as server	Yes; Connection configured on one side only
Transfer memory 244 byte - Inputs 244 byte - Outputs 244 byte 2. Interface 244 byte Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Ves • MPI No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible		Yes
Inputs244 byte Outputs244 byte2. Interface244 byte2. InterfaceIntegrated RS 485 interfacePhysicsRS 485IsolatedYesPower supply to interface (15 to 30 V DC), max.200 mAProtocolsVes• MPINo• PROFIBUS DP masterYes• PROFIBUS DP slaveYes; A DP slave at both interfaces simultaneously is not possible• Point-to-point connectionNoPROFIBUS DP masterYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterNo	— DPV1	No
- Outputs 244 byte 2. Interface Integrated RS 485 interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols Ves • MPI No • PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No	Transfer memory	
2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols • MPI • PROFIBUS DP master Yes • PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible	— Inputs	244 byte
Interface typeIntegrated RS 485 interfacePhysicsRS 485IsolatedYesPower supply to interface (15 to 30 V DC), max.200 mAProtocols• MPI• MPINo• PROFIBUS DP masterYes• PROFIBUS DP slaveYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterNo	— Outputs	244 byte
Interface typeIntegrated RS 485 interfacePhysicsRS 485IsolatedYesPower supply to interface (15 to 30 V DC), max.200 mAProtocols• MPI• MPINo• PROFIBUS DP masterYes• PROFIBUS DP slaveYes; A DP slave at both interfaces simultaneously is not possible• PROFIBUS DP masterNo	2 Interface	
Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols No • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master No		Integrated RS 485 interface
Power supply to interface (15 to 30 V DC), max. 200 mA Protocols No • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • PROFIBUS DP master No	Physics	RS 485
Protocols No • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No PROFIBUS DP master Yes; A DP slave at both interfaces simultaneously is not possible • Point-to-point connection No	Isolated	Yes
• MPINo• PROFIBUS DP masterYes• PROFIBUS DP slaveYes; A DP slave at both interfaces simultaneously is not possible• Point-to-point connectionNoPROFIBUS DP masterYes	Power supply to interface (15 to 30 V DC), max.	200 mA
PROFIBUS DP master Yes PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible Point-to-point connection No PROFIBUS DP master	Protocols	
PROFIBUS DP slave Point-to-point connection PROFIBUS DP master PROFIBUS DP master	• MPI	No
Point-to-point connection No PROFIBUS DP master	 PROFIBUS DP master 	Yes
PROFIBUS DP master	 PROFIBUS DP slave 	Yes; A DP slave at both interfaces simultaneously is not possible
	 Point-to-point connection 	No
Transmission rate, max. 12 Mbit/s	PROFIBUS DP master	
	 Transmission rate, max. 	12 Mbit/s

 Number of DP slaves, max. 	124
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
- SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
 Number of DP slaves that can be simultaneously activated/deactivated, max. 	8
 Direct data exchange (slave-to-slave communication) 	Yes; As subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 192 byte
— Outputs, max.	8 192 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet (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; Only with active interface
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes
 Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No

- /	
Transfer memory	044 h t
— Inputs	244 byte
— Outputs	244 byte
Communication functions	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
• supported	Yes
 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 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
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,	30
max.usable for routing	X1 as a 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
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; Only the last 100 entries are retained
 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°0
• max.	60 °C
Configuration	
Configuration software	

• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
• STEP 7 Lite	No
Programming	
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	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	360 g
last modified:	08/15/2019