## **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	
Product type designation	CPU 317-2 DP
HW functional status	01
Firmware version	V3.3
Engineering with	
<ul> <li>Programming package</li> </ul>	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
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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	1 s
nput current	
Current consumption (rated value)	870 mA
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
• integrated	1 024 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul><li>Plug-in (MMC)</li><li>Plug-in (MMC), max.</li></ul>	Yes 8 Mbyte
<ul> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> </ul>	8 Mbyte
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup	8 Mbyte 10 a
<ul> <li>Plug-in (MMC), max.</li> <li>Data management on MMC (after last programming), min.</li> <li>Backup</li> <li>present</li> </ul>	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free)
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery	8 Mbyte 10 a
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery  CPU processing times	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery  PU processing times  for bit operations, typ.	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  0.025 µs
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery  CPU processing times	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery  CPU processing times  for bit operations, typ.	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  0.025 µs
Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup  present without battery  CPU processing times  for bit operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ.	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  0.025 μs 0.03 μs
Plug-in (MMC), max.  Data management on MMC (after last programming), min.  Backup  present  without battery  CPU processing times  for bit operations, typ.  for word operations, typ.  for fixed point arithmetic, typ.	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  0.025 μs 0.03 μs 0.04 μs
Plug-in (MMC), max. Data management on MMC (after last programming), min.  Backup present without battery  PU processing times  for bit operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ.	8 Mbyte 10 a  Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data  0.025 μs 0.03 μs 0.04 μs

	reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
<ul><li>Number, max.</li></ul>	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	
<ul><li>Number, max.</li></ul>	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	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	
<ul> <li>per priority class</li> </ul>	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	F40
• Number	512
Retentivity	V
— adjustable	Yes
— preset	No retentivity
Time range	10 ma
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	Von
• present	Yes
• Type	SFB Unlimited /limited only by PAM capacity)
Number  Data areas and their retentivity	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	OEC librate
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	4.006 huto
Size, max.  Patrothitic positions.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	Vi
Retentivity adjustable     Retentivity preset	Yes; via non-retain property on DB 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	256 byte
Outputs, default	256 byte
Subprocess images	200 byte
	1
<ul> <li>Number of subprocess images, max.</li> <li>Digital channels</li> </ul>	·
	65 526
Inputs     of which central	65 536 1 024
— of which central	
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 expansion units, max.	3
Number of DP masters	
• 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  Operating hours counter.	the clock continues at the time of day it had when power was switched off
Operating hours counter	4
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
• on MPI, device	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DF, master	res, with Dr. slave dilly slave clock

# In AS, note   Yes   Yes   Yes   Yes   Yes   Yes   The member visit NTP   No   No   The member visit NTP   No   No   The member visit NTP   No   The member visit NTP   No   The member visit NTP   The membe	a in AC montor	Von
Number of digital inputs  Number of pidal aduptis  Number of pidal aduptis  Number of pidal aduptis  Number of PICPINET interfaces  Number of RS 488 interfaces  1 interfaces  Interface byee	• in AS, master	Yes
Nomber of digital inputs  Number of digital inputs  Number of digital inputs  Number of digital outputs  Number of analog inputs  Number of Assign inputs  Number of RASS interfaces  No RASS i		
Number of digital injusts  Number of range injusts  Number of analog injusts  O  Number of RS 485 Interfaces  Number of RS 485 Interfaces  Number of RS 485 Interfaces  O  Number of RS 485 Interfaces  Interface types  Interface bypes  Interface		NO
Digital cutoritis  Number of digital outputs  Number of PROFINET interfaces  Number of PROFINET interfaces  Number of RS 458 interfaces  10 Combined MP / PROFIBUS DP and PROFIBUS DP  Number of RS 458 interfaces  11 Interface  Number of RS 458 interfaces  12 Combined MP / PROFIBUS DP and PROFIBUS DP  Number of RS 458 interfaces  12 Combined MP / PROFIBUS DP and PROFIBUS DP  Number of RS 458 interfaces  12 Number of RS 458 interfaces  13 Number of RS 458 interfaces  14 Number of RS 458 interfaces  15 Number of RS 458 interfaces  16 Number of RS 458 interfaces  17 Number of RS 458 interfaces  18 Number of RS 458 interfaces  19 Number of RS 458 interfaces  10 Number of RS 458 interfaces  11 Number of RS 458 interfaces  12 Number of RS 458 interfaces  15 Number		0
Number of digital outputs  Number of Rotalog inputs  Integrated Rotalog		U .
Number of PROFINET Interfaces  Number of RS 458 interfaces  Number of RS 458 interfaces  Number of RS 458 interfaces  Number of RS 452 interfaces  Number of RS 458 interfaces  Interface hype Interface		0
Number of PROFINET Interfaces  Number of PROFINET Interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Number of RS 422 interfaces  Number of RS 425 interfaces  Number of RS 425 interfaces  Interface Dysp		
Interfaces   Number of PROFINET interfaces   0   Number of RS 455 interfaces   2   Combined MPI / PROFIBUS DP and PROFIBUS DP   Number of RS 422 interfaces   0		0
Number of RS 485 interfaces   0		0
Number of RS 485 interfaces  Number of RS 422 interfaces  Interface type Interfac		0
Number of RS 422 interfaces   Interface type		
Interface ype Interface ype Interface ype Interface ypes Interface		·
Interface type  Interface type  Interface types  Interfac		
Interface types		Integrated RS 485 interface
RS 485	·	
RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIEUS DP device Point-to-point connection No  MPI  Transmission rate, max.  12 Mbit/s  Services PROFIBUS DP communication Rouling		
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.  12 Mbit/s  Services PCIOP communication Routing Ro	* *	Yes
Proticuls  MPI PROFIBUS DP master PROFIBUS DP device Point-Lo-point connection No  MPI  Transmission rate, max.  Profided ada communication PS communication PS communication, as client PS rommunication, as server PROFIBUS DP master PROFIBUS DP master Profided ada communication Ps sommunication, as server PROFIBUS DP master PROFIDES DP		
PROFIBUS DP master PROFIBUS DP device Point-Lo-point connection  MPI  Transmission rate, max.  12 Mbit/s  Services PG/OP communication Pgs PG-ST communication Pg Ves PS communication PG Ves PROFIBUS DP master PROFIBUS DP master PGOP communication PG Ves PG Ves PGOP Communication PG Ves P		
PROFIBUS DP device Point-to-point connection No  MPI  Transmission rate, max.  12 Mbit/s  Services  PG/OP communication Routing Routi	• MPI	Yes
Point-to-point connection  MPI  Transmission rate, max.  Services  PG/OP communication ST communication PG conductation PG consumination PG c	PROFIBUS DP master	Yes
MPI         ● Transmission rate, max.       12 Mbit/s         Services       - PG/OP communication       Yes         — Routing       Yes         — Global data communication       Yes         — S7 basic communication       Yes         — S7 communication, as client       No; but via CP and loadable FB         — S7 communication, as server       Yes         PROFIBUS DP master       12 Mbit/s         ● Transmission rate, max.       12 Mbit/s         ● max. number of DP devices       124         Services       124         — PG/OP communication       Yes         — Routing       Yes         — PG/OP communication       Yes         — PG Global data communication       No         — S7 basic communication       Yes; I blocks only         — S7 communication, as client       No         — S7 communication, as client       No         — S7 communication, as server       Yes         — Equidistance       Yes         — Isochronous mode       No         — SYNC/FREEZE       Yes         — activation/deactivation of DP devices that can be activated/deactivated at the same time       8         — Direct data exchange (slave-to-slave communication)       Yes	PROFIBUS DP device	Yes; A DP slave at both interfaces simultaneously is not possible
MPI         ● Transmission rate, max.       12 Mbit/s         Services       - PG/OP communication       Yes         — Routing       Yes         — Global data communication       Yes         — S7 basic communication       Yes         — S7 communication, as client       No; but via CP and loadable FB         — S7 communication, as server       Yes         PROFIBUS DP master       12 Mbit/s         ● Transmission rate, max.       12 Mbit/s         ● max. number of DP devices       124         Services       124         — PG/OP communication       Yes         — Routing       Yes         — PG/OP communication       Yes         — PG Global data communication       No         — S7 basic communication       Yes; I blocks only         — S7 communication, as client       No         — S7 communication, as client       No         — S7 communication, as server       Yes         — Equidistance       Yes         — Isochronous mode       No         — SYNC/FREEZE       Yes         — activation/deactivation of DP devices that can be activated/deactivated at the same time       8         — Direct data exchange (slave-to-slave communication)       Yes	Point-to-point connection	No
Services		
PG/OP communication Possible data communication, as client Possible data communication, as server PROFIBUS DP master  ■ Transmission rate, max. 12 Mbit/s ■ max. number of DP devices 124  Services  ■ PG/OP communication Possible data communication Possib	• Transmission rate, max.	12 Mbit/s
— Routing         Yes           — Global data communication         Yes           — S7 basic 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           — 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 devices         Yes           — activation/deactivated at the same time         Popul Address area           — Inputs, max.         8 kbyte           — Inputs, max.         8 kbyte           — Inputs, max.	Services	
Global data communication  - \$7 basic communication  - \$7 communication, as client  - \$7 communication, as server  - \$7 communication  - \$7 communication  - \$7 communication  - \$7 basic communication  - \$7 basic communication  - \$7 communication  - \$7 communication  - \$7 communication  - \$7 communication, as server  - \$8 communication, as server  - \$9 communication, as server  - \$1 basic communication  - \$1 basic communication  - \$2 communication, as server  - \$3 communication, as server  - \$4 communication  - \$7 communication  - \$7 communication  - \$7 communication  - \$2 communication	— PG/OP communication	Yes
	— Routing	Yes
	<ul> <li>Global data communication</li> </ul>	Yes
	<ul> <li>S7 basic communication</li> </ul>	Yes
PROFIBUS DP master  ● Transmission rate, max.  ● max. number of DP devices  Services  - 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 - Direct data exchange (slave-to-slave communication) - DPV1 - DPV1 - Ves  Address area - Inputs, max Outputs, max User data per DP device - Inputs, max Outputs, max.	— S7 communication	Yes; Only server, configured on one side
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, as client - S7 communication, as client - S8 communication, as client - S9 communication of DP devices - Isochronous mode - S9 communication of DP devices - max. number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 - Yes; as subscriber - Inputs, max Outputs, max Outputs, max User data per DP device - Inputs, max 244 byte - Upputs, max Outputs, max.	<ul> <li>S7 communication, as client</li> </ul>	No; but via CP and loadable FB
<ul> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> <li>5ervices</li> <li>— PG/OP communication</li> <li>— Routing</li> <li>— Global data communication</li> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>— S7 communication</li> <li>— S7 communication, as client</li> <li>— S7 communication, as server</li> <li>— Equidistance</li> <li>— Equidistance</li> <li>— SYNC/FREEZE</li> <li>— activation/deactivation of DP devices</li> <li>— max. number of DP devices that can be activated/deactivated at the same time</li> <li>— Direct data exchange (slave-to-slave communication)</li> <li>— DPV1</li> <li>Address area</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>— Inputs, max.</li> <li>— Inputs, max.</li> <li>— Inputs, max.</li> <li>— Unputs, max.</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>— Cutputs, max.</li> <li>— Late of DP device</li> <li>— Inputs, max.</li> <li>— Cutputs, max</li></ul>		Yes
■ max. number of DP devices  Services  - PG/OP communication		
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/FREZE Yes - activation/deactivation of DP devices Yes - max. number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 Yes  Address area - Inputs, max. 8 kbyte - User data per DP device - Inputs, max. 244 byte - Outputs, max. 244 byte - Outputs, max. 244 byte		
		124
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/FREZE Yes activation/deactivation of DP devices Yes max. number of DP devices that can be activated/deactivated at the same time Direct data exchange (slave-to-slave communication) DPV1 Yes  Address area Inputs, max. 8 kbyte Outputs, max. 8 kbyte Inputs, max. 244 byte Outputs, max. 244 byte		
Global data communication  S7 basic communication  S7 communication  S7 communication  S7 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  - activation/deactivation of DP devices  - max. number of DP devices that can be activated/deactivated at the same time  Direct data exchange (slave-to-slave communication)  DPV1  Yes  Address area  Inputs, max.  S kbyte  Outputs, max.  1 liputs, max.  S kbyte  Liser data per DP device  Inputs, max.  244 byte  244 byte		
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 Direct data exchange (slave-to-slave communication) DPV1  Address area Inputs, max. Sk byte Isochronous mode No No Yes Yes Yes Yes S8	<u> </u>	
— 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/FREZE Yes — activation/deactivation of DP devices Yes — max. number of DP devices that can be activated/deactivated at the same time — Direct data exchange (slave-to-slave communication) — DPV1 Yes  Address area — Inputs, max. 8 kbyte User data per DP device — Inputs, max. 244 byte — Outputs, max. 244 byte		
- S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 - Yes  Address area - Inputs, max Outputs, max Outputs, max User data per DP device - Inputs, max Outputs, max.		
- S7 communication, as server - Equidistance - Isochronous mode - Isochronous mode - SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 - Yes  Address area - Inputs, max Outputs, max Outputs, max User data per DP device - Inputs, max Outputs, max.		
<ul> <li>Equidistance</li> <li>Isochronous mode</li> <li>SYNC/FREEZE</li> <li>Activation/deactivation of DP devices</li> <li>— activation/deactivation of DP devices</li> <li>— max. number of DP devices that can be activated/deactivated at the same time</li> <li>— Direct data exchange (slave-to-slave communication)</li> <li>— DPV1</li> <li>Address area</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>8 kbyte</li> <li>User data per DP device</li> <li>— Inputs, max.</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs,</li></ul>	•	
Isochronous mode		
- SYNC/FREEZE - activation/deactivation of DP devices - max. number of DP devices that can be activated/deactivated at the same time - Direct data exchange (slave-to-slave communication) - DPV1 Yes  Address area - Inputs, max Outputs, max Outputs, max. User data per DP device - Inputs, max Outputs, max.		
<ul> <li>— activation/deactivation of DP devices</li> <li>— max. number of DP devices that can be activated/deactivated at the same time</li> <li>— Direct data exchange (slave-to-slave communication)</li> <li>— DPV1</li> <li>Address area</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>User data per DP device</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>— 244 byte</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>— 244 byte</li> </ul>		
<ul> <li>max. number of DP devices that can be activated/deactivated at the same time</li> <li>Direct data exchange (slave-to-slave communication)</li> <li>DPV1</li> <li>Yes</li> <li>Address area</li> <li>Inputs, max.</li> <li>Outputs, max.</li> <li>Inputs, max.</li> <li>Inputs, max.</li> <li>Outputs, max.</li> <li>Whyte</li> <li>User data per DP device</li> <li>Inputs, max.</li> <li>User data per DP device</li> <li>Outputs, max.</li> <li>244 byte</li> <li>Outputs, max.</li> <li>244 byte</li> </ul>		
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> <li>— DPV1</li> <li>Yes</li> <li>Address area</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>User data per DP device</li> <li>— Inputs, max.</li> <li>244 byte</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>244 byte</li> </ul>	— max. number of DP devices that can be	
— DPV1 Yes  Address area — Inputs, max. 8 kbyte — Outputs, max. 8 kbyte  User data per DP device — Inputs, max. 244 byte — Outputs, max. 244 byte	— Direct data exchange (slave-to-slave	Yes; as subscriber
<ul> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>User data per DP device</li> <li>— Inputs, max.</li> <li>— Outputs, max.</li> <li>— Outputs, max.</li> <li>244 byte</li> <li>— Outputs, max.</li> <li>244 byte</li> </ul>	•	Yes
<ul> <li>Outputs, max.</li> <li>User data per DP device</li> <li>Inputs, max.</li> <li>Outputs, max.</li> <li>244 byte</li> <li>244 byte</li> </ul>	Address area	
User data per DP device  — Inputs, max. 244 byte  — Outputs, max. 244 byte	— Inputs, max.	8 kbyte
<ul><li>— Inputs, max.</li><li>— Outputs, max.</li><li>244 byte</li><li>244 byte</li></ul>	— Outputs, max.	8 kbyte
— Outputs, max. 244 byte	User data per DP device	
	— Inputs, max.	244 byte
1st interface / PROFIBUS DP device / header	— Outputs, max.	244 byte
	1st interface / PROFIBUS DP device / header	

<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes; Connection configured on one side only
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes
communication)	
— 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
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>PROFIBUS DP device</li> </ul>	Yes; A DP slave at both interfaces simultaneously is not possible
Point-to-point connection	No
PROFIBUS DP master	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
max. number of DP devices	124
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul><li>— S7 basic communication</li></ul>	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
<ul> <li>— S7 communication, as client</li> </ul>	No; but via CP and loadable FB
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
<ul> <li>activation/deactivation of DP devices</li> </ul>	Yes
<ul> <li>max. number of DP devices that can be activated/deactivated at the same time</li> </ul>	8
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 192 byte
— Outputs, max.	8 192 byte
User data per DP device	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
2nd interface / PROFIBUS DP device / header	
• GSD file	The latest GSD file is available on the Internet
	(http://www.siemens.com/profibus-gsd)
Transmission rate, max.	(http://www.siemens.com/profibus-gsd) 12 Mbit/s
<ul><li>Transmission rate, max.</li><li>automatic baud rate search</li></ul>	· · ·
	12 Mbit/s

Convince	
Services	Von
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes; Only server, configured on one side
<ul> <li>— S7 communication, as client</li> </ul>	No; but via CP and loadable FB
<ul> <li>S7 communication, as server</li> </ul>	Yes
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
PROFIsafe	No
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
• supported	Yes
<ul> <li>Number of GD loops, max.</li> </ul>	8
<ul> <li>Number of GD packets, max.</li> </ul>	8
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	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	
<ul><li>supported</li></ul>	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
<ul> <li>usable for PG communication</li> </ul>	31
<ul> <li>reserved for PG communication</li> </ul>	1
<ul> <li>adjustable for PG communication, min.</li> </ul>	1
<ul> <li>adjustable for PG communication, max.</li> </ul>	31
<ul> <li>usable for OP communication</li> </ul>	31
<ul> <li>reserved for OP communication</li> </ul>	1
<ul> <li>adjustable for OP communication, min.</li> </ul>	1
<ul> <li>adjustable for OP communication, max.</li> </ul>	31
usable for S7 basic communication	30
<ul> <li>reserved for S7 basic communication</li> </ul>	0
<ul> <li>adjustable for S7 basic communication, min.</li> </ul>	0
adjustable for S7 basic communication, max.	30
usable for routing	X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.
- 400010 101 100011g	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

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
	30
— of which status variables, max.	14
— of which control variables, max.	14
Forcing	Von
• Forcing	Yes
• Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	W.
• present	Yes
Number of entries, max.	500
— adjustable	No
<ul><li>of which powerfail-proof</li></ul>	100; Only the last 100 entries are retained
<ul> <li>Number of entries readable in RUN, max.</li> </ul>	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; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
STEP 7 Lite	No
STEP 7 Lite  configuration / programming / header	No
	No see instruction list
configuration / programming / header	
configuration / programming / header  • Command set	see instruction list
configuration / programming / header  • Command set  • Nesting levels	see instruction list
<ul> <li>configuration / programming / header</li> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> </ul>	see instruction list 8 see instruction list
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)	see instruction list 8 see instruction list
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB) Programming language	see instruction list 8 see instruction list see instruction list
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD	see instruction list 8 see instruction list see instruction list
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD	see instruction list 8 see instruction list see instruction list Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL	see instruction list 8 see instruction list see instruction list  Yes Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection User program protection/password protection	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection Block encryption	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection Block encryption	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection Block encryption	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection User program protection/password protection Block encryption  Dimensions  Width Height	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
configuration / programming / header  Command set  Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection User program protection/password protection Block encryption  Dimensions  Width Height Depth	see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye

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