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

Owner to a constitution (in the least of the	400 4
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A 1 A ² ·s
rt	I A ··s
Power loss	
Power 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 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
Willout Buttory	
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	
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
● Type	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
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)

retentive data area in total	all, max. 256 KB
	all, Illax. 200 ND
Flag	4 096 byte
Number, max.	
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Address area	
I/O address area	
• 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
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 expansion units, max.	3
Number of DP masters	
• integrated	2
• via CP	4
Number of operable FMs and CPs (recommende	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	

• 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
• in AS, master	Yes
• in AS, slave	Yes
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs Number of analog inputs	0
Number of analog inputs	O
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

• Racks, max.

Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Profibility Doint connection MPI • Transmission rate, max. - S7 communication - S7 communication, as client - Transmission rate, max. 12 Mbit/s Services - PG/OP communication - S7 communication - S7 communication, as server • Transmission rate, max. 12 Mbit/s Services - PG/OP communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server • Transmission rate, max. • Number of DP slaves, max. 124 Services - PG/OP communication - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max. - Direct data exchange (slave-to-slave communication) - DPV1 Address area - Inputs, max. - Outputs, max. 8 kbyte User data per DP slave - User data per DP slave - User data per DP slave	Isolated	Yes
MPI Yes PROFIBUS DP master PROFIBUS DP slave Yes; A DP slave at both interfaces simultaneously is not possible Point-to-point connection MPI Transmission rate, max. 12 Mbit/s Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication, as server — Yes PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. 124 Services — PG/OP communication — S7 basic communication — S7 basic communication — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct datale exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Udputs, max. 8 kbyte User data per DP slave	Power supply to interface (15 to 30 V DC), max.	200 mA
PROFIBUS DP master PROFIBUS DP slave Proint-to-point connection No MPI Transmission rate, max. PG/OP communication S7 basic communication PS7 communication PS8 communication PS7 communicati	Protocols	
PROFIBUS DP slave Point-to-point connection No MPI ■ Transmission rate, max. Services — PG/OP communication — S7 communication, as server ■ Transmission rate, max. ■ 12 Mbit/s ■ 12	• MPI	Yes
Point-to-point connection MPI Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as server Transmission rate, max Number of DP slaves - S7 basic communication - S7 basic communication - S7 communication, as server 12 Mbit/s No: but via CP and loadable FB - S7 communication, as server 12 Mbit/s - Number of DP slaves, max. 12 Mbit/s - Number of DP slaves, max. 12 Mbit/s - Routing - Global data communication - S7 basic communication - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 - Yes - Address area - Inputs, max Outputs, max Outputs, max Outputs, max Outputs, max Outputs, max St but blocks only - Yes - Subscriber - Sync/FREEZE - Activation/deactivated, max Outputs, max Outputs, max St byte - St	 PROFIBUS DP master 	Yes
MPI	 PROFIBUS DP slave 	Yes; A DP slave at both interfaces simultaneously is not possible
Transmission rate, max. Services - PG/OP communication	Point-to-point connection	No
Services - PG/OP communication	MPI	
PG/OP communication Pouting Po	• Transmission rate, max.	12 Mbit/s
Routing Yes Global data communication Yes Yes Pasic communication Yes, Only server, configured on one side Pasic communication, as client Pasic Routing Pasi	Services	
Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication S7 communication S7 communication Pes PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as client S7 communication, as server Equidistance Pequidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Address area Inputs, max. 8 kbyte User data per DP slave	— PG/OP 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 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 client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes Address area - Inputs, max. 8 kbyte User data per DP slave	— Routing	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 — Lequidistance Yes — Isochronous mode No — SYNC/FREZE Yes — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 8 kbyte User data per DP slave	 Global data communication 	Yes
	 S7 basic communication 	Yes
PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. 224 Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Address area - Inputs, max Outputs, max Outputs, max. 12 Mbit/s 124 Moit/s 124 Services 124 Moit/s 124 Services - Services - Yes - Holocks only - Yes; Only server, configured on one side - Yes; Only server, configured on one side - No - Yes - Ves - Ves - Equidistance - Yes - Leguidistance - Yes - SYNC/FREZE - Yes - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes - Address area - Inputs, max Outputs, max Outputs, max Skbyte - User data per DP slave	— S7 communication	Yes; Only server, configured on one side
PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. 224 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 slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Address area - Inputs, max Outputs, max Outputs, max User data per DP slave - Skbyte - Number of DP slave - Skbyte - Number of DP slave - Skbyte - Number of DP slaves - Skbyte	 — S7 communication, as client 	No; but via CP and loadable FB
■ Transmission rate, max. ■ Number of DP slaves, max. ■ 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 slaves ■ Number of DP slaves that can be simultaneously activated/deactivated, max. ■ Direct data exchange (slave-to-slave communication) ■ DPV1 Address area ■ Inputs, max. ■ Outputs, max. ■ Skbyte User data per DP slave	 S7 communication, as server 	Yes
● Number of DP slaves, max. Services — PG/OP communication Yes — Routing Yes — Global data communication Yes; I blocks only — S7 basic 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 simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 8 kbyte User data per DP slave	PROFIBUS DP master	
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 simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes Address area - Inputs, max. 8 kbyte User data per DP slave	Transmission rate, max.	12 Mbit/s
 — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — 8 kbyte User data per DP slave 	 Number of DP slaves, max. 	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/FREEZE Yes - Activation/deactivation of DP slaves Yes - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes Address area - Inputs, max. 8 kbyte User data per DP slave	Services	
- Global data communication	— PG/OP communication	Yes
— 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 simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 8 kbyte User data per DP slave	— Routing	Yes
 S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Yes Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Address area Inputs, max. Outputs, max. 8 kbyte User data per DP slave 	 Global data communication 	No
 S7 communication, as client S7 communication, as server Equidistance Isochronous mode No SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Address area Inputs, max. 8 kbyte User data per DP slave 	 S7 basic communication 	Yes; I blocks only
— S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 — Yes Address area — Inputs, max. — Outputs, max. — Outputs, max. — Outputs, max. — S7 communication, Yes Yes 8 kbyte User data per DP slave	— S7 communication	Yes; Only server, configured on one side
 Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Yes Address area Inputs, max. Outputs, max. 8 kbyte User data per DP slave 	 S7 communication, as client 	No
- Isochronous mode No - SYNC/FREEZE Yes - Activation/deactivation of DP slaves Yes - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes Address area - Inputs, max. 8 kbyte - Outputs, max. 8 kbyte User data per DP slave	 S7 communication, as server 	Yes
- SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) - DPV1 Yes Address area - Inputs, max Outputs, max Outputs, max User data per DP slave	— Equidistance	Yes
— Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. — Outputs, max. — Outputs, max. User data per DP slave	— Isochronous mode	No
 Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Yes Address area Inputs, max. Outputs, max. 8 kbyte 8 kbyte 8 kbyte 9 kbyte 9 kbyte 9 kbyte 9 kbyte 9 kbyte 	— SYNC/FREEZE	Yes
simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max. — Outputs, max. User data per DP slave	 Activation/deactivation of DP slaves 	Yes
communication) — DPV1 Yes Address area — Inputs, max. 8 kbyte — Outputs, max. 8 kbyte User data per DP slave		8
Address area — Inputs, max. 8 kbyte — Outputs, max. 8 kbyte User data per DP slave		Yes; as subscriber
 — Inputs, max. — Outputs, max. User data per DP slave 	— DPV1	Yes
— Outputs, max. 8 kbyte User data per DP slave	Address area	
User data per DP slave	— Inputs, max.	8 kbyte
	— Outputs, max.	8 kbyte
	·	
— Inputs, max.	— Inputs, max.	244 byte

— Outputs, max.	244 byte
PROFIBUS DP slave	
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
— S7 communication, as server	Yes; Connection configured on one side only
 Direct data exchange (slave-to-slave 	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
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	No
 PROFIBUS DP master 	Yes
PROFIBUS DP masterPROFIBUS DP slave	Yes Yes; A DP slave at both interfaces simultaneously is not possible
PROFIBUS DP slave	Yes; A DP slave at both interfaces simultaneously is not possible
PROFIBUS DP slavePoint-to-point connection	Yes; A DP slave at both interfaces simultaneously is not possible
PROFIBUS DP slavePoint-to-point connectionPROFIBUS DP master	Yes; A DP slave at both interfaces simultaneously is not possible No
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes No
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes No Yes; I blocks only
 PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication 	Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes No Yes; I blocks only Yes; Only server, configured on one side

— 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 client— S7 communication, as server	
	No; but via CP and loadable FB
— S7 communication, as server— Direct data exchange (slave-to-slave	No; but via CP and loadable FB Yes
— S7 communication, as server— Direct data exchange (slave-to-slave communication)	No; but via CP and loadable FB Yes Yes
— S7 communication, as server— Direct data exchange (slave-to-slave communication)— DPV1	No; but via CP and loadable FB Yes Yes
 — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory 	No; but via CP and loadable FB Yes Yes No
 — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Communication functions	No; but via CP and loadable FB Yes Yes No 244 byte 244 byte
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Communication functions PG/OP communication	No; but via CP and loadable FB Yes Yes No 244 byte 244 byte Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Communication functions PG/OP communication Data record routing	No; but via CP and loadable FB Yes Yes No 244 byte 244 byte
- S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 Transfer memory - Inputs - Outputs Communication functions PG/OP communication Data record routing Global data communication	No; but via CP and loadable FB Yes Yes No 244 byte 244 byte Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Communication functions PG/OP communication Data record routing	No; but via CP and loadable FB Yes Yes No 244 byte 244 byte Yes

 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, max. 	30
• 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

Ambient temperature during operation ● min. 0 °C • max. 60 °C	Test commissioning functions	
Number of breakpoints	Status block	Yes; Up to 2 simultaneously
Status/control variable Status/control variable Variables Number of variables, max. of which status variables, max. Inputs, outputs, memory bits, DB, times, counters Number of variables, max. Forcing Forcing Forcing Forcing Forcing, variables Number of variables, max. Inputs, outputs No Diagnostic buffer Present Present No No Adjustable No Adjustable No Adjustable Present No No No No No No No No No N	Single step	Yes
Status/control variable Variables Inputs, outputs, memory bits, DB, times, counters Inputs, outputs Inputs, outputs, memory bits, DB, times, counters Inputs, outputs, outputs Inputs, outputs Inputs	Number of breakpoints	4
Number of variables, max. Of which status variables, max. Of which control wariables, max. Of wariables, wariables, wariables, wariables, wariables, wariables, wariables, wariables, wariables, max. Of war	Status/control	
Number of variables, max. of which status variables, max. of which control variables, max. 14 Forcing Forcing Forcing Forcing, variables Number of variables, max. 10 Diagnostic buffer Present Number of entries, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - preset Present Can be read out Present Present Present Present Present Present Present Present Present No - Adjustable - of which powerfail-proof No No - Adjustable - preset No Present Pres	Status/control variable	Yes
- of which status variables, max of which control variables, max of which control variables, max. • Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • present • Number of entries, max adjustable - of which powerfail-proof • Number of entries readable in RUN, max adjustable - preset • variables - preset • can be read out Service data • can be read out • min: • mix: • max 60 °C Configuration Configuration Configuration Configuration Configuration Configuration Configuration Configuration Configuration • STEP 7 - in the present is see instruction list • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language - LAD Yes Yes Yes Yes 10 Yes 30 Yes 10 Yes Yes Yes Yes Yes Yes Yes Ye	Variables	Inputs, outputs, memory bits, DB, times, counters
Forcing	 Number of variables, max. 	30
Forcing Forcing Forcing Forcing, variables Forcing, variables Number of variables, max. Present Foresent Forcing Foresent Fores	— of which status variables, max.	30
Forcing, variables Forcing, variables Forcing, variables Inputs, outputs Inputs, outputs, outputs, outputs Inputs, outputs, outpu	— of which control variables, max.	14
• Forcing, variables • Number of variables, max. Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset • Can be read out Ambient conditions Ambient temperature during operation • min. • max. Configuration Configuration Configuration Configuration software • STEP 7 • STEP 7 Lite Programming • Command set • Nesting levels • System function blocks (SFB) • System function blocks (SFB) • Programming language — LAD Yes Inputs, outputs 10 Inputs, outputs 10 Inputs, outputs 10 Pess Fost Inputs, outputs 10 Pess Fost Fost Fost Inputs, outputs 10 Pess Inputs, outputs 10 Pess Fost Fost Inputs, outputs 10 Pess Fost Fost Inputs, outputs 10 Pess Fost Fost Inputs, outputs 10 Pess Inputs, outputs 10 Pess Fost Fost Inputs, outputs 10 Inputs, outputs 10 Inputs, outputs 10 Pess Fost Inputs, outputs 10 Pess Inputs, outputs 10 Inputs, outputs 10 Inputs, outputs 10 Inputs	Forcing	
Number of variables, max. Diagnostic buffer present	● Forcing	Yes
Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset — preset — preset — preset — to an be read out Programming • STEP 7 Lite Programming • Command set • Nesting levels • System function s(SFC) • System function blocks (SFB) Programming language — LAD Programming language — LAD Pool which powerfail-proof — 100; Only the last 100 entries are retained 100; Only the last 100 entr	Forcing, variables	Inputs, outputs
Present Number of entries, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - preset No No No No Nolly the last 100 entries are retained Number of entries readable in RUN, max. - adjustable - preset 10 Service data • can be read out Yes Ambient conditions Ambient temperature during operation • min. • max. 60 °C Configuration Configuration Configuration software • STEP 7 • STEP 7 No Programming • Command set Nesting levels • System function s(SFC) • System function blocks (SFB) Programming language - LAD Yes	 Number of variables, max. 	10
Number of entries, max. — adjustable — of which powerfail-proof Number of entries readable in RUN, max. — adjustable — preset 100; Only the last 100 entries are retained Number of entries readable in RUN, max. — adjustable — preset 10 Service data • can be read out Yes Ambient conditions Ambient emperature during operation • min. • max. 60 °C Configuration 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 • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD Yes	Diagnostic buffer	
- adjustable	• present	Yes
- of which powerfail-proof • Number of entries readable in RUN, max. - adjustable - preset • can be read out • min. • max. • max. Configuration Configuration software • STEP 7 Lite Programming • Command set • Nesting levels • System function (SFC) • System function blocks (SFB) Programming language - LAD Ves; From 10 to 499 Yes; STEP 7 Us 499 Yes; STEP 7 V5.5 + SP1 O °C O °C Yes; STEP 7 V5.5 + SP1 Or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No Programming • Command set • Nesting levels • System function s(SFC) • System function blocks (SFB) Programming language - LAD	Number of entries, max.	500
Number of entries readable in RUN, max. — adjustable — preset 10 Service data • can be read out Ambient conditions Ambient temperature during operation • min. • max. 60 °C Configuration Configuration Configuration STEP 7 • STEP 7 Vs.5 + SP1 or higher or STEP 7 Vs.3 + SP2 or higher with HSP 203 • STEP 7 Lite No Programming • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD Yes	— adjustable	No
— 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 Configuration Configuration 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	— of which powerfail-proof	100; Only the last 100 entries are retained
— preset 10 Service data • can be read out Yes Ambient conditions Ambient temperature during operation • min. • max. 60 °C Configuration Configuration Configuration software • STEP 7 • STEP 7 Itie Programming • Command set • Nesting levels • System function (SFC) • System function blocks (SFB) Programming language — LAD Yes 10 10 10 10 10 10 10 10 10 1	 Number of entries readable in RUN, max. 	499
Service data • can be read out Yes Ambient conditions Ambient temperature during operation • min. • max. • max. Configuration Configuration software • STEP 7 • STEP 7 Lite Programming • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD Yes Yes Yes Yes STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No See instruction list see instruction list see instruction list	— adjustable	Yes; From 10 to 499
	— preset	10
Ambient conditions Ambient temperature during operation • min. • max. 60 °C Configuration Configuration software • STEP 7 • STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 • STEP 7 Lite Programming • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD Yes	Service data	
Ambient temperature during operation • min. • max. 60 °C Configuration Configuration software • STEP 7 • STEP 7 • STEP 7 Lite Programming • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD • Yes • Yes • Command set • See instruction list • Nesting levels • System function blocks (SFB) • System function blocks (SFB) • Yes	• can be read out	Yes
 min. 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 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD Yes	Ambient conditions	
 max. 60 °C Configuration 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 Nesting levels Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD Yes Yes Yes	Ambient temperature during operation	
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 System functions (SFC) System function blocks (SFB) Programming language — LAD Yes	● min.	0 °C
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 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD Yes	• max.	60 °C
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 Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203 No System function list see instruction list Yes	Configuration	
higher with HSP 203 • STEP 7 Lite Programming • Command set • Nesting levels • Nystem functions (SFC) • System function blocks (SFB) Programming language — LAD higher with HSP 203 No See instruction list see instruction list Yes	Configuration software	
STEP 7 Lite No Programming Command set see instruction list Nesting levels System functions (SFC) see instruction list System function blocks (SFB) Programming language — LAD Yes	• STEP 7	
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		-
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD Yes 	• STEP 7 Lite	No
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD Yes 	Programming	
 System functions (SFC) see instruction list System function blocks (SFB) see instruction list Programming language	Command set	see instruction list
System function blocks (SFB) Programming language — LAD Yes	Nesting levels	8
Programming language — LAD Yes	System functions (SFC)	see instruction list
— LAD Yes	 System function blocks (SFB) 	see instruction list
	Programming language	
— FBD	— 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	
	40
Width	40 mm

Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm

Weights	
Weight, approx.	360 g

05/13/2020 last modified: