SIEMENS

Data sheet

6ES7317-6FF04-0AB0



SIMATIC S7-300, CPU 317F-2DP, Central processing unit with 1.5 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave Micro Memory Card required Can be used with software package S7 Distributed Safety V5.2 SP1 or higher

General information	
HW functional status	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 202 + Distributed Safety
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.
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
Memory	
Work memory	
integrated	1 536 kbyte
expandable	No
Load memory	
Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 a
Backup	
• present	Yes; 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

Number, max.	ED	
Size, max. 64 kbyle	FB • Number max	2 048: Number range: 0 to 7999
Secondary Seco		•
Number max. 2 048, Number range: 0 to 7999		of hote
Size, max. Size, max. See instruction list		2 048: Number range: 0 to 7999
Number of free toylar OBs		
Size, max. G4 kbyle		
Size, max. G4 kbyle		see instruction list
Number of free cycle of the adam OBs		
Number of time alam OBs Number of cycle interrupt OBs Number of cycle interrupt OBs Number of process alam OBs Number of process alam OBs Number of DPV alam OBS Number of startup OBs Number of synchronous error OBs Number Number of startup OBs Number of Startup OB		
Number of delay alam OBa Number of process alam OBs Number of process alam OBs Number of process alam OBs Number of sochronous mode OBs Number of startup OBs Number of startup OBs Number of startup OBs Number of synchronous error OBs Number of sy	· ·	
	Number of delay alarm OBs	
Number of IDPV1 alam OBs Number of sechnorous mode OBs Number of sechnorous mode OBs Number of sechnorous mode OBs Number of synchronous error OBs Per priority class e additional within an error OB Per priority class a difficult within an error OB Per priority class Additional within an error OB Per priority class and the Preton within an error observed and area (not items, counters, flags), max Pet priority available Additional within an error observed and area (not items, counters, flags), max Pet priority available All priority and priority of DB Pet priority and priority and DB Pet priority available All priority and priority and priority and DB Pet priority and	•	
Number of isochronous mode OBs	•	3; OB 55, 56, 57
Number of asynchronous error OBs 2; OB 80, 82, 85, 86, 87	 Number of isochronous mode OBs 	
Number of asynchronous error OBs 2; OB 80, 82, 85, 86, 87	Number of startup OBs	1; OB 100
Number of synchronous error OBs	·	
Nesting depth	•	
• per priority class 4 4 4 4 4 4 4 4 4		
• additional within an error OB Counters, timers and their retentivity For counter • Number • Number — adjustable — upper limit — vumber • Number • Number • Norelimit — upper limit — upper		16
Number		4
Number	Counters, timers and their retentivity	
Number 512	-	
Retentivity		512
— lower limit	Retentivity	
- upper limit	•	Yes
- preset	— lower limit	0
Counting range	— upper limit	511
Lower limit	— preset	Z 0 to Z 7
Lec counter	Counting range	
Feed	— lower limit	0
• present • Type • Number • S12 Retentivity adjustable lower limit upper limit preset lower limit upper limit	— upper limit	999
• Type • Number Number Number Number S12 Retentivity adjustable lower limit upper limit preset No retentivity Time range lower limit upper limit upper limit upper limit upper limit lower limit lower limit upper limit -	IEC counter	
● Number ● Number ● Number ● Number S12 Retentivity	• present	Yes
● 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) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. 256 kbyte Flag ● Size, max. 4 096 byte ● Retentivity available Yes; From MB 0 to MB 4 095 ● Retentivity available Set are more byte Data blocks ● Retentivity adjustable Yes; via non-retain property on DB	• Type	SFB
Number Number S12 Retentivity - adjustable - lower limit - upper limit - upper limit - preset No retentivity Time range - lower limit - upper limit - upper limit 9 990 s IEC timer • present • present • present • Type • Number Number Number Retentive data area (incl. timers, counters, flags), max. Flag • Retentivity available • Retentivity available • Retentivity reset • Number MB 0 to MB 4 095 • Retentivity adjustable Pess on DB Retentivity adjustable Pess on MB 0 to MB 4 095 • Retentivity adjustable Pess on DB	Number	Unlimited (limited only by RAM capacity)
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) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag Size, max Retentivity available Retentivity reset Retentive flock memories Retentive adjustable Retentivity adjustable Yes; via non-retain property on DB	S7 times	
- adjustable - lower limit 0 - upper limit 511 - preset No retentivity Time range - lower limit - upper limit 9 990 s IEC timer • present • Type • Number • Number • Unlimited (limited only by RAM capacity) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Size, max. • Retentivity available • Retentivity preset • Retentivity preset • Number of clock memories Bata blocks • Retentivity adjustable Pes; via non-retain property on DB	Number	512
- lower limit 511 - preset No retentivity Time range - lower limit 10 ms - upper limit 9 990 s IEC timer • present Yes • Type • Number Unlimited (limited only by RAM capacity) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. 256 kbyte Flag • Size, max. 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 • Retentivity adjustable Yes; via non-retain property on DB	Retentivity	
- upper limit - preset No retentivity Time range - lower limit - upper limit 9 990 s IEC timer	— adjustable	Yes
— preset No retentivity Time range — lower limit 10 ms — upper limit 9 990 s IEC timer • present Yes • Type SFB • Number Unlimited (limited only by RAM capacity) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. 256 kbyte Flag • Size, max. 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 • Retentivity adjustable Yes; via non-retain property on DB	— lower limit	0
Time range - lower limit - upper limit 9 990 s IEC timer • present • Type • Number Number Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Retentivity available • Retentivity preset • Number of clock memories Data blocks • Retentivity adjustable • Retentivity adjustable Ves; via non-retain property on DB	— upper limit	511
— lower limit — upper limit 9 990 s IEC timer	— preset	No retentivity
HEC timer	Time range	
Present ● present ● Type ● Number Ves ● Number Unlimited (limited only by RAM capacity) Pata areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag ● Size, max. ● Size, max. ● Retentivity available ● Retentivity available ● Retentivity preset ● Retentivity preset ● Number of clock memories Data blocks ● Retentivity adjustable Yes; via non-retain property on DB	— lower limit	10 ms
 present Type Number Unlimited (limited only by RAM capacity) Pata areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag Size, max. Retentivity available Retentivity available Retentivity preset Retentivity preset Number of clock memories Bata blocks Retentivity adjustable Yes; via non-retain property on DB 	— upper limit	9 990 s
• Type • Type • Number • Number Unlimited (limited only by RAM capacity) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Size, max. • Retentivity available • Retentivity available • Retentivity preset • Retentivity preset • Number of clock memories Data blocks • Retentivity adjustable Yes; via non-retain property on DB	IEC timer	
Number Unlimited (limited only by RAM capacity) Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Plag Size, max. Retentivity available Retentivity available Retentivity preset Retentivity preset Number of clock memories Data blocks Retentivity adjustable Yes; via non-retain property on DB	• present	Yes
Retentive data area (incl. timers, counters, flags), max. Flag Size, max. Retentivity available Retentivity preset Retentivity preset Number of clock memories Retentivity adjustable Retentivity adjustable Retentivity adjustable Retentivity adjustable Yes; via non-retain property on DB	• Type	SFB
Retentive data area (incl. timers, counters, flags), max. Flag Size, max. Retentivity available Retentivity preset Number of clock memories Pata blocks Retentivity adjustable Yes; via non-retain property on DB	Number	Unlimited (limited only by RAM capacity)
Flag Size, max. 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 Retentivity adjustable Yes; via non-retain property on DB	Data areas and their retentivity	
 Size, max. Retentivity available Retentivity preset Number of clock memories Data blocks Retentivity adjustable Yes; From MB 0 to MB 4 095 MB 0 to MB 15 8; 1 memory byte Data blocks Yes; via non-retain property on DB	Retentive data area (incl. timers, counters, flags), max.	256 kbyte
 Retentivity available Retentivity preset Number of clock memories Data blocks Retentivity adjustable Yes; From MB 0 to MB 4 095 MB 0 to MB 15 Immory byte Yes; via non-retain property on DB 	Flag	
 Retentivity preset Number of clock memories Data blocks Retentivity adjustable Yes; via non-retain property on DB 	• Size, max.	4 096 byte
 Number of clock memories Data blocks Retentivity adjustable Yes; via non-retain property on DB 	Retentivity available	Yes; From MB 0 to MB 4 095
Data blocks ● Retentivity adjustable Yes; via non-retain property on DB	Retentivity preset	MB 0 to MB 15
Data blocks ● Retentivity adjustable Yes; via non-retain property on DB	 Number of clock memories 	8; 1 memory byte
	Data blocks	
Retentivity preset Yes	Retentivity adjustable	Yes; via non-retain property on DB
	Retentivity preset	Yes

Local data	
Local data ● per priority class, max.	32 768 hyte: May 2048 hytes per block
per priority class, max. Address area	32 768 byte; Max. 2048 bytes per block
I/O address area	0.402 hyta
• Inputs	8 192 byte
Outputs	8 192 byte
of which distributed	0.4001.1
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	0.4001
• Inputs	8 192 byte
• Outputs	8 192 byte
• Inputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
• Inputs, default	1 024 byte
Outputs, default	1 024 byte
Subprocess images	
Number of subprocess images, max.	1
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 (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	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
	Yes; Must be restarted at each restart
• retentive	Too, Muot be Toolartou at oud! Toolart
retentive Clock synchronization	100, made 50 rodantoù de oudin rodant
	Yes
Clock synchronization	
Clock synchronization • supported	Yes
Clock synchronization • supported • to MPI, master	Yes Yes

a in AS mactor	Voc
in AS, masterin AS, slave	Yes Yes
on Ethernet via NTP Dicital inverte	No
Digital inputs	0
Number of digital inputs Digital outputs	C .
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	U .
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	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 — S7 communication	Yes Yes; Only server, configured on one side
— S7 communication — S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as circle — S7 communication, as server	Yes
PROFIBUS DP master	163
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 simultaneously activated/deactivated, max. 	8
 Direct data exchange (slave-to-slave communication) 	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	

— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
 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
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	200 mA
Protocols	
• 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	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Number of DP slaves, max. Services	124
 Number of DP slaves, max. Services PG/OP communication 	124 Yes
 Number of DP slaves, max. Services PG/OP communication Routing 	Yes Yes
 Number of DP slaves, max. Services PG/OP communication Routing Global data communication 	Yes Yes No
 Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication 	Yes Yes No Yes; I blocks only
 Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side
Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes
 Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Equidistance 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes; OB 61
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes
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 server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes
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 server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max.	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes 8
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 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)	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes
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 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)	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes 8
Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication)	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Address area 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes Yes 8 Yes; as subscriber Yes
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP 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. 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes Yes 8 Yes; as subscriber Yes
 Number of DP slaves, max. 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. User data per DP slave 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber Yes 8 192 byte 8 192 byte
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP 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. User data per DP slave — Inputs, max. 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber Yes 8 192 byte 8 192 byte
 Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP 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. User data per DP slave — Inputs, max. — Outputs, max. — Outputs, max. 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber Yes 8 192 byte 8 192 byte
 Number of DP slaves, max. 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. PROFIBUS DP slave 	Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes Yes 8 Yes; as subscriber Yes 8 192 byte 8 192 byte 244 byte 244 byte The latest GSD file is available on the Internet

	Yes; only with passive interface
automatic baud rate search Address area may	
Address area, max. Hear data per address area, max.	32 32 huta
User data per address area, max. Con ileas.	32 byte
Services	Von
— 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	TO TO THE PROPERTY OF THE PROP
— Inputs	244 byte
— Outputs	244 byte
Protocols	244 byte
PROFIsafe	No
communication functions / header	110
	Von
PG/OP communication	Yes
Data record routing	Yes
Global data communication	Von
• 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	V
• 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	3.00.10.7
	Yes
 supported 	
supported as server	
• as server	Yes
as server as client	Yes Yes; Via CP and loadable FB
• as server	Yes
as server as client	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the
as serveras clientUser data per job, max.	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the
 as server as client User data per job, max. S5 compatible communication	Yes Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
 as server as client User data per job, max. S5 compatible communication supported 	Yes Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
 as server as client User data per job, max. S5 compatible communication supported Number of connections	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. usable for OP communication usable for OP communication 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 31 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. usable for OP communication reserved for OP communication — reserved for OP communication — reserved for OP communication	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 1
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication — reserved for OP communication, min. — adjustable for OP communication, min.	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 1 1 1 1
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication adjustable for OP communication, min. — adjustable for OP communication, max.	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 1 1 1 1 1 31 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication • usable for S7 basic communication	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 31 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication reserved for S7 basic communication 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 1 1 1 1 1 31 30 0
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication madjustable for S7 basic communication, min. 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 31 31 31 31 31 31 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 31 30 0 0 0 30
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication adjustable for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. 	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 31 31 31 31 31 31 31
 as server as client User data per job, max. S5 compatible communication supported Number of connections overall usable for PG communication reserved for PG communication, min. adjustable for PG communication, max. • usable for OP communication reserved for OP communication adjustable for OP communication adjustable for OP communication, min. adjustable for OP communication, max. • usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. • usable for routing	Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) Yes; via CP and loadable FC 32 31 1 1 1 31 31 31 31 31 31 31 31 31 31

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 °C
• max.	60 °C
configuration / header	
Configuration software	
Configuration software	Vac: STED 7 \/5 5 ± SD1 or higher or STED 7 \/5 3 ± SD2 or higher with HSD
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 STEP 7 Lite	203
• STEP 7	203
STEP 7 STEP 7 Lite configuration / programming / header Command set	203 No
 STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels 	203 No see instruction list 8
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC)	203 No see instruction list
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB)	203 No see instruction list 8 see instruction list
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC)	203 No see instruction list 8 see instruction list
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language	No see instruction list 8 see instruction list see instruction list
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD	203 No see instruction list 8 see instruction list see instruction list
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes
STEP 7 STEP 7 Lite configuration / programming / header Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph®	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes
STEP 7 STEP 7 Lite 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	No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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	No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
STEP 7 STEP 7 Lite 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 Weights	203 No see instruction list 8 see instruction list yes Y
STEP 7 STEP 7 Lite 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	203 No see instruction list 8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye