Data sheet



SIPLUS S7-300 CPU 317F-2DP -25...+60 °C with conformal coating Based on 6ES7317-6FF04-0AB0 . Central processing unit with 1.5 MB work memory, 1st interface MPI/DP 12Mbit/ , 2nd interface DP master/ Slave, Micro Memory Card required Can be used with software package S7 Distributed Safety V5.2 SP1 or higher

Figure similar

Caparal information	
General information 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 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.
Input current	
Current consumption (rated value)	870 mA
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
² t	1 A ² ·s

Power loss, typ. Memory Work memory integrated expandable size of retentive memory for retentive data blocks Load memory Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Present Poresent Ves; Guaranteed by MMC (maintenance-free) Ves; Program and data CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for fixed point arithmetic, typ. O.04 µs for floating point arithmetic, typ. O.16 µs CPU-blocks Number of blocks (total) Plug-in (MMC) Number, max. Size, max. Posser, max	Power loss	
Very memory Integrated 1 536 kbyte expandable Size of retentive memory for retentive data blocks Elag-in (MMC) Yes Flug-in (MMC), max. 8 Mbyte Plug-in (MMC), max. 8 Mbyte Plug-in (MMC), max. 10 y Prosent Yes: Guaranteed by MMC (maintenance-free) evithout battery Yes: Program and data Por word operations, typ. 0.025 µs for word operations, typ. 0.04 µs for fixed point arithmetic, typ. 0.16 µs Flug-in (interrupt OBs Vest in the maximum number of loadable blocks can be reduced by the MMC used. FB	Power loss, typ.	4.5 W
Very memory Integrated 1 536 kbyte expandable Size of retentive memory for retentive data blocks Elag-in (MMC) Yes Flug-in (MMC), max. 8 Mbyte Plug-in (MMC), max. 8 Mbyte Plug-in (MMC), max. 10 y Prosent Yes: Guaranteed by MMC (maintenance-free) evithout battery Yes: Program and data Por word operations, typ. 0.025 µs for word operations, typ. 0.04 µs for fixed point arithmetic, typ. 0.16 µs Flug-in (interrupt OBs Vest in the maximum number of loadable blocks can be reduced by the MMC used. FB	Memory	
expandable Size of retentive memory for retentive data blocks Load memory Plug-in (MMC) Plug-in (MMC), max. Oata management on MMC (after last programming), min. Backup present veithout battery Yes; Guaranteed by MMC (maintenance-free) veithout battery version (more of source) version (more of source) version (more of source) version (more of source) version (more of source) CPU processing times For bit operations, typ. for fixed point arithmetic, typ. o.03 µs for fixed point arithmetic, typ. o.16 µs CPU-blocks Number of blocks (total) version (more of source)		
• Size of retentive memory for retentive data blocks Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery • processing times for bit operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. 0.04 µs FOPU-blocks Number of blocks (total) • Number, max. • Size, max. • Size, max. • Number, max. • Size, max. • Size, max. • Description • Number, max. • Size, max. • Size, max.	• integrated	1 536 kbyte
blocks Load memory Plug-in (MMC)	• expandable	No
Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Packup present vithout battery Presert vithout battery		256 kbyte
Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup Present Present Present Present Processing times For bit operations, typ. O.025 µs for word operations, typ. O.04 µs For floating point arithmetic, typ. O.16 µs CPU-blocks Number of blocks (total) Number, max. Size, max. Pumber, max. Size, max. Pumber of blocks Pumber, max. Size, max. Pumber, max. Size, max. Pumber of blocks Pumber, max. Size, max. Pumber, max. Size, max. Pumber of blocks Pumber, max. Size, max. Pumber, max. Size, max. Pumber, max. Size, max. Pumber of free cycle OBs Number of free cycle OBs Number of free cycle OBs Number of delay alarm OBs Number of cyclic interrupt OBs	Load memory	
Data management on MMC (after last programming), min. Backup Present Yes; Guaranteed by MMC (maintenance-free) vithout battery Program and data CPU processing times for bit operations, typ. O.025 μs for word operations, typ. O.03 μs for fixed point arithmetic, typ. for floating point arithmetic, typ. O.16 μs CPU-blocks Number of blocks (total) Number, max. Size, max. P Number, max. Size, max. CPU-blocks P Number of free cycle OBs Number of free cycle OBs Number of delay alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs P Number of cyclic interrupt OBs	• Plug-in (MMC)	Yes
programming), min. Backup • present • without battery Pes; Guaranteed by MMC (maintenance-free) vithout battery Pes; Program and data CPU processing times for bit 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. • Size, max. PB • Number, max. • Size, max. 2 048; Number range: 1 to 16000 4 kbyte FC • Number, max. • Size, max. 64 kbyte FC • Number, max. • Size, max. 64 kbyte Description • Size, max. 64 kbyte • Description • Size, max. 64 kbyte • Number of free cycle OBs • Number of free cycle OBs • Number of delay alarm OBs • Number of delay alarm OBs • Number of deloyic interrupt OBs • Number of cyclic interrupt OBs	Plug-in (MMC), max.	8 Mbyte
Present Without battery Yes; Program and data CPU processing times for bit operations, typ. 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) Number, max. Size, max. Pumber, max. Size, max. 64 kbyte Pumber, max. Size, max. Pumber of free cycle OBs Number of free cycle OBs Number of free cycle OBs Number of delay alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Pumber of cyclic interrupt OBs	· · ·	10 y
■ without battery Yes; Program and data CPU processing times for bit operations, typ. for fixed point arithmetic, typ. for fixed point arithmetic, typ. 0.03 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. ■ Size, max. ■ At kbyte ■ Number, max. ■ Size, max. ■ OB ■ Description ■ Description ■ Size, max. ■ At kbyte ■ Number of free cycle OBs ■ Number of time alarm OBs ■ Number of delay alarm OBs ■ Number of cyclic interrupt OBs ■ Number of cyclic interrupt OBs ■ Number of size, interrupt OBs	Backup	
for bit operations, typ. for word operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. CPU-blocks Number of blocks (total) Number, max. Size, max. Size, max. Size, max. PCU-blocks 1 2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. 2 048; Number range: 1 to 16000 64 kbyte FB Number, max. 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. 4 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. 5 ize, max. 64 kbyte Description See instruction list Size, max. 64 kbyte Number of free cycle OBs Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35	• present	Yes; Guaranteed by MMC (maintenance-free)
for bit operations, typ. for word operations, typ. for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. O.04 µs O.16 µs CPU-blocks Number of blocks (total) Power of blocks (total) Number, max. Size, max. Power of word operations, typ. O.024 µs OBU OUTPU-blocks Number of blocks (total) OUTPU-blocks Number, max. OUTPU-blocks OUTPU-blocks OUTPU-blocks Number, max. OUTPU-blocks OUTP	• without battery	Yes; Program and data
for word operations, typ. for fixed point arithmetic, typ. for floating point arithmetic, typ. O.04 µs O.16 µs CPU-blocks Number of blocks (total) Number, max. Size, max. ONUMBER, max. Size, max.	CPU processing times	
for fixed point arithmetic, typ. for floating point arithmetic, typ. 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 Pounds, max. 2 048; Number range: 0 to 7999 A kbyte FC Number, max. A size, max. A size, max. County of the size of the s	for bit operations, typ.	0.025 μs
FC Number, max. Size, max. Number, max. Size, max. OB Description Description Size, max. Descript	for word operations, typ.	0.03 μs
Publocks Number of blocks (total) 2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. B Number, max. Size, max. 2 048; Number range: 1 to 16000 64 kbyte FB Number, max. Size, max. 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. Size, max. 2 048; Number range: 0 to 7999 64 kbyte FC Number, max. Size, max. 64 kbyte OB Description See instruction list Size, max. Number of free cycle OBs Number of free cycle OBs Number of delay alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of cyclic interrupt OBs	for fixed point arithmetic, typ.	0.04 μs
Number of blocks (total) 2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. PNumber, max. Size, max. 2 048; Number range: 1 to 16000 64 kbyte PNumber, max. Size, max. 2 048; Number range: 0 to 7999 64 kbyte PC Number, max. Size, max. 2 048; Number range: 0 to 7999 64 kbyte PC Number, max. Size, max. 64 kbyte OB Description See instruction list Size, max. Number of free cycle OBs Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of cyclic interrupt OBs	for floating point arithmetic, typ.	0.16 μs
can be reduced by the MMC used. DB Number, max. Size, max. Number, max. Size, max. Number, max. Size, max. Output Number, max. Size, max. Output Number, max. Size, max. Number range: 0 to 7999 Author of free cycle OBs Number of time alarm OBs Number of cyclic interrupt OBs Number of size, max. Can be reduced by the MMC used. Author of 16000 Substitution 16000 Author of 16000 Aut	CPU-blocks	
 Number, max. Size, max. 64 kbyte Number, max. Size, max. Size, max. Size, max. Size, max. Number range: 0 to 7999 4 kbyte Number, max. Size, max. Size, max. Akbyte OB Description Size, max. Number of free cycle OBs Number of time alarm OBs Number of cyclic interrupt OBs YOB 32, 33, 34, 35 	Number of blocks (total)	
 Size, max. 64 kbyte Number, max. Size, max. 64 kbyte Size, max. Number, max. Size, max. Size, max. Size, max. Description Size, max. Size, max. Size, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 4 CB 32, 33, 34, 35 	DB	
FB ● Number, max. ● Size, max. 64 kbyte FC ● Number, max. ● Size, max. 2 048; Number range: 0 to 7999 ● Akbyte OB ● Description ● Description ● Size, max. ● Akbyte ● Number of free cycle OBs ● Number of time alarm OBs ● Number of delay alarm OBs ● Number of cyclic interrupt OBs ● Number of cyclic interrupt OBs	Number, max.	2 048; Number range: 1 to 16000
 Number, max. Size, max. 64 kbyte FC Number, max. Size, max. Size, max. OB Description Size, max. Size, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 1; OB 10 Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35 	• Size, max.	64 kbyte
 Size, max. Number, max. Size, max. Size, max. Description Size, max. Size, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs OB 32, 33, 34, 35 	FB	
Number, max. Size, max. Description Size, max. Description Size, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of cyclic interrupt OBs 2 048; Number range: 0 to 7999 64 kbyte 64 kbyte 1; OB 1 1; OB 1 1; OB 1 1; OB 10 2; OB 20, 21 4; OB 32, 33, 34, 35	• Number, max.	2 048; Number range: 0 to 7999
 Number, max. Size, max. Description Size, max. Size, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 2 048; Number range: 0 to 7999 64 kbyte 1; OB 1 2; OB 1 30 2; OB 20, 21 4; OB 32, 33, 34, 35 	• Size, max.	64 kbyte
 Size, max. Description Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35 	FC	
OB Description Size, max. 64 kbyte Number of free cycle OBs 1; OB 1 Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35	• Number, max.	2 048; Number range: 0 to 7999
 Description Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Size, max. 1; OB 1 2; OB 10 3; OB 10 4; OB 32, 33, 34, 35 	• Size, max.	64 kbyte
 Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35 	ОВ	
 Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 1; OB 10 2; OB 20, 21 Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35 	Description	see instruction list
 Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs 1; OB 10 2; OB 20, 21 4; OB 32, 33, 34, 35 	• Size, max.	64 kbyte
 Number of delay alarm OBs Number of cyclic interrupt OBs 2; OB 20, 21 4; OB 32, 33, 34, 35 	 Number of free cycle OBs 	1; OB 1
 Number of cyclic interrupt OBs 4; OB 32, 33, 34, 35 	 Number of time alarm OBs 	1; OB 10
	 Number of delay alarm OBs 	2; OB 20, 21
• Number of process alarm OBs 1; OB 40	 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)
Data areas and their retentivity	

Data areas and their retentivity	
retentive data area in total	All, max. 256 KB
Flag	
• Number, 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 preset	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	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	V
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.	10 s; Typ.: 2 s
 Behavior of the clock following POWER-ON 	Clock continues running after POWER OFF
 Behavior of the clock following expiry of backup period 	Clock continues to run with the time at which the power failure occurred
Operating hours counter	
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
● to MPI, master	Yes
● to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	No
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0

Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
4 1-1- 5	
1. Interface Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
 Global data communication 	Yes
 S7 basic communication 	Yes
— S7 communication	Yes; Only server, configured on one side
 S7 communication, as client 	No; but via CP and loadable FB
 S7 communication, as server 	Yes
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	124
Services	
— PG/OP communication	Yes
— Routing	Yes
 Global data communication 	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
 S7 communication, as client 	No
 S7 communication, as server 	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
— Activation/deactivation of DP slaves	Yes
 Number of DP slaves that can be 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
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 slave	Yes
Point-to-point connection	No
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes

 Global data communication 	No
 S7 basic communication 	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
 S7 communication, as client 	No; but via CP and loadable FB
 S7 communication, as server 	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
 Number of DP slaves that can be 	8
simultaneously activated/deactivated, max.	
 — Direct data exchange (slave-to-slave communication) 	Yes; As subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 192 byte
— Outputs, max.	8 192 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
 Address area, max. 	32
 User data per address area, max. 	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
 Global data communication 	No
— S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
 S7 communication, as client 	No; but via CP and loadable FB
 S7 communication, as server 	Yes
 — Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte

Communication functions	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
• supported	Yes
 Number of GD loops, max. 	8
 Number of GD packets, max. 	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	8
 Size of GD packets, max. 	22 byte
• Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
• supported	Yes
 User data per job, max. 	76 byte
• User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; Via CP and loadable FB
User data per job, max.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
• overall	32
 usable for PG communication 	31
 reserved for PG communication 	1
 adjustable for PG communication, min. 	1
 adjustable for PG communication, max. 	31
 usable for OP communication 	31
 reserved for OP communication 	1
 adjustable for OP communication, min. 	1
— adjustable for OP communication, max.	31
• usable for S7 basic communication	30
— reserved for S7 basic communication	0
 adjustable for S7 basic communication, min. 	0
 adjustable for S7 basic communication, 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
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
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	60 °C; = Tmax
Ambient temperature during storage/transportation	

• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	2 000 m
 Ambient air temperature-barometric pressure- altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems	
 to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
 to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
Remark	
 Note regarding classification of environmental conditions acc. to EN 60721 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high availability
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
Configuration	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
• STEP 7 Lite	No
Programming	
Command set	see instruction list
 Nesting levels 	8
 System functions (SFC) 	see instruction list

 System function blocks (SFB) 	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
User program protection/password protection	Yes
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	360 g