SIEMENS

Data sheet

6AG1416-5HS06-7AB0



SIPLUS S7-400 CPU 416-5H based on 6ES7416-5HS06-0AB0 with conformal coating, -25...+70 °C, central processing unit for S7-400H and S7-400F/FH, 5 interfaces: 1x MPI/DP, 1x DP, 1x PN and 2 for SYNC modules, 16 MB memory (512 KB data/512 KB program)

Figure similar

General information	
Product type designation	CPU 416-5H PN/DP
HW functional status	1
Firmware version	V6.0
Product function	
Isochronous mode	No
Engineering with	
 Programming package 	As of STEP 7 V5.5 SP2 with HF1
CiR - Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	0 µs
Supply voltage	
Rated value (DC)	Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	1.6 A
from backplane bus 5 V DC, max.	1.9 A
from backplane bus 24 V DC, max.	150 mA; 150 mA per DP interface
from interface 5 V DC, max.	90 mA; At each DP interface
Power loss	
Power loss, typ.	7.5 W
Memory	
Type of memory	RAM
Work memory	
 integrated 	16 Mbyte
 integrated (for program) 	6 kbyte
 integrated (for data) 	10 kbyte
expandable	No
Load memory	
 expandable FEPROM 	Yes; with Memory Card (FLASH)
 expandable FEPROM, max. 	64 Mbyte
 integrated RAM, max. 	1 Mbyte
 expandable RAM 	Yes
 expandable RAM, max. 	64 Mbyte
Backup	
• present	Yes
 with battery 	Yes; all data
without battery	No
Battery	
Backup battery	

 Backup current, typ. 	180 μA; Valid up to 40°C		
Backup current, typ: Backup current, max.	1 000 µA		
Backup time, max.	Dealt with in the module data manual with the secondary conditions and		
	the factors of influence		
 Feeding of external backup voltage to CPU 	5 V DC to 15 V DC		
CPU processing times			
for bit operations, typ.	12.5 ns		
for word operations, typ.	12.5 ns		
for fixed point arithmetic, typ.	12.5 ns		
for floating point arithmetic, typ.	25 ns		
CPU-blocks			
DB			
 Number, max. 	16 000; Number range: 1 to 16000		
• Size, max.	64 kbyte		
FB			
 Number, max. 	8 000; Number range: 0 to 7999		
• Size, max.	64 kbyte		
FC	0.000 Must a series 0.4. 7000		
• Number, max.	8 000; Number range: 0 to 7999		
• Size, max.	64 kbyte		
OB • Number, max.	see instruction list		
• Number, max. • Size, max.	64 kbyte		
Number of free cycle OBs	1; OB 1		
Number of time alarm OBs	8; OB 10-17		
Number of delay alarm OBs	4; OB 20-23		
Number of cyclic interrupt OBs	9; OB 30-38		
Number of process alarm OBs	8; OB 40-47		
Number of DPV1 alarm OBs	3; OB 55-57		
Number of startup OBs	2; OB 100, 102		
 Number of asynchronous error OBs 	9; OB 80-88		
 Number of synchronous error OBs 	2; OB 121, 122		
Number of synchronous error OBs Nesting depth	2, OB 121, 122		
Nesting depth oper priority class	2; OB 121, 122 24		
Nesting depth • per priority class • additional within an error OB			
Nesting depth oper priority class	24		
Nesting depth per priority class additional within an error OB Counters, timers and their retentivity S7 counter 	24 2		
Nesting depth per priority class additional within an error OB Counters, timers and their retentivity S7 counter Number 	24		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity	24 2 2 048		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable	24 2 2 048 Yes		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit	24 2 2 048 Yes 0		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit — upper limit	24 2 2 048 Yes 0 2 047		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit — upper limit — preset	24 2 2 048 Yes 0		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit — upper limit — preset Counting range	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit — preset Counting range — lower limit	24 2 2 048 Yes 0 2 047 Z 0 to Z 7 0		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity — adjustable — lower limit — preset Counting range — lower limit — upper limit — upper limit	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit - upper limit - lower limit	24 2 2 048 Yes 0 2 047 Z 0 to Z 7 0 9999		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit - preset Counting range - lower limit - upper limit - upper limit - preset	24 2 2 048 Yes 0 2 047 2 0 to Z 7 0 9999 Yes		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit - upper limit - lower limit	24 2 2 048 Yes 0 2 047 Z 0 to Z 7 0 9999		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit - preset Counter • present • Type	24 2 2 048 Yes 0 2 047 2 0 to Z 7 0 999		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit - preset Counter Number	24 2 2 048 Yes 0 2 047 2 0 to Z 7 0 999		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit IEC counter • present • Type • Number \$7 times	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity)		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit IEC counter • present • Type • Number	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity)		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - preset Counting range - lower limit - upper limit IEC counter • present • Type • Number S7 times • Number	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - preset Counter • lower limit - upper limit - upper limit IEC counter • present • Type • Number \$7 times • Number Retentivity - adjustable - upper limit	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 047		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - upper limit - upper limit - present • Type • Number S7 times • Number - adjustable - lower limit - upper limit - upper limit - preset	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - upper limit - upper limit - upper limit - upper limit - present • Type • Number Retentivity - adjustable - lower limit - upper limit - upper limit - upper limit - upper limit - preset Time range	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 048		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - present • Type • Number S7 times • Number Retentivity - adjustable - lower limit - upper limit - preset Time range - lower limit	24 2 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 048 Yes 0 10 ms		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number \$7 times • Number Retentivity - adjustable - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - lower limit - upper limit - preset Time range - lower limit - upper limit	24 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 048		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - lower limit - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - lower limit - preset Time range - lower limit - upper limit - upper limit - upper limit - upper limit	24 2 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 048 Yes 0 1 0 ms 9 990 s		
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity \$7 counter • Number Retentivity - adjustable - lower limit - upper limit - preset Counter • lower limit - upper limit IEC counter • present • Type • Number \$7 times • Number Retentivity - adjustable - upper limit IEC counter • present • Type • Number S7 times • Number Retentivity - adjustable - lower limit - upper limit - preset Time range - lower limit - upper limit	24 2 2 2 048 Yes 0 2 047 2 047 2 0 to Z 7 0 999 Yes SFB Unlimited (limited only by RAM capacity) 2 048 Yes 0 2 048 Yes 0 10 ms		

• Number	Unlimited (limited only by RAM capacity)	
Data areas and their retentivity		
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)	
Flag		
• Size, max.	16 384 byte	
 Retentivity available 	Yes	
Retentivity preset	MB 0 to MB 15	
Number of clock memories	8; in 1 memory byte	
Local data	C4 Librate	
 adjustable, max. preset 	64 kbyte 32 kbyte	
· ·	J2 NDYIE	
Address area		
I/O address area	16 khuto	
InputsOutputs	16 kbyte 16 kbyte	
Process image	TO KDYLE	
Inputs, adjustable	8 kbyte	
Outputs, adjustable	8 kbyte	
Inputs, default	1 024 byte	
Outputs, default	1 024 byte	
 consistent data, max. 	244 byte	
Access to consistent data in process image	Yes	
Subprocess images		
Number of subprocess images, max.	15	
Digital channels		
Inputs	131 072	
— of which central	131 072	
Outputs	131 072	
— of which central	131 072	
Analog channels		
Inputs	8 192	
— of which central	8 192	
Outputs	8 192	
— of which central	8 192	
Hardware configuration		
Number of expansion units, max.	21	
connectable OPs	95	
Multicomputing	No	
Interface modules	•	
Number of connectable IMs (total), max.	6	
 Number of connectable IM 460s, max. Number of connectable IM 463s, max. 	6 4: Single mede entr	
Number of DP masters	4; Single mode only	
integrated	2	
via CP	2 10; CP 443-5 Extended	
Mixed mode IM + CP permitted	No	
via interface module	0	
Number of IO Controllers		
integrated	1	
• via CP	0	
Number of operable FMs and CPs (recommended)		
• FM	See manual Automation System S7-400H fault-tolerant systems.	
	Limited by number of slots and number of connections	
• CP, PtP	See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections	
PROFIBUS and Ethernet CPs	14; Of which max. 10 CP as DP master	
Slots		
required slots	2	
Time of day		
Clock		
Hardware clock (real-time)	Yes	
retentive and synchronizable	Yes	
Resolution	1 ms	

 Deviation per day (buffered), max. 	1.7 s; Power off
 Deviation per day (outreted), max. Deviation per day (unbuffered), max. 	8.6 s; Power on
Operating hours counter	
• Number	16
Number/Number range	0 to 15
Range of values	SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2^31 - 1 hours
Granularity	1 h
retentive	Yes
Clock synchronization	
 supported 	Yes
 to MPI, master 	Yes
• to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes
 in AS, master 	Yes
 in AS, slave 	Yes
on Ethernet via NTP	Yes; As client
Time difference in system when synchronizing via	
• Ethernet, max.	10 ms; Via NTP
• MPI, max.	200 ms
Interfaces	
Number of RS 485 interfaces	2
Number of other interfaces	2; Fiber-optic interface
Optical interface	No
1. Interface	
Interface type	MPI/PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	150 mA
Protocols	
• MPI	Yes
 PROFIBUS DP master 	Yes
PROFIBUS DP slave	No
MPI	
Number of connections	32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
— S7 communication	Yes
- S7 communication, as client	Yes
- S7 communication, as server	Yes
PROFIBUS DP master	16: If a diagnostice repeater is used on the line, the number of
Number of connections, max.	16; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
 Transmission rate, max. 	12 Mbit/s
Number of DP slaves, max.	32
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
- S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	No
— Isochronous mode	No
- SYNC/FREEZE	No
 Activation/deactivation of DP slaves 	No
 — Direct data exchange (slave-to-slave 	No

communication)	Vec
	Yes
Address area	0 libit
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	0.444 A
— User data per DP slave, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
PROFIBUS DP slave	
Number of connections	No configuration of CPU as DP slave
2. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; Autosensing
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	No
Number of connection resources	96
Interface types	
• RJ 45 (Ethernet)	Yes
Number of ports	2
integrated switch	Yes
Protocols	100
PROFINET IO Controller	Yes
PROFINET IO Device	No
PROFINET CBA	No
PROFIBUS DP master	No
PROFIBUS DP slave	No
Open IE communication	Yes
Web server	
	No
Point-to-point connection	No
Media redundancy	Yes
PROFINET IO Controller	100 MbH/a
• Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 communication	Yes
— Isochronous mode	No
 — Shared device 	
	Yes; Single mode only
— Prioritized startup	No
 Prioritized startup Number of connectable IO Devices, max. 	No 256; In redundant mode via both interfaces
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, 	No
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. 	No 256; In redundant mode via both interfaces 256
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. 	No 256; In redundant mode via both interfaces 256 256
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices 	No 256; In redundant mode via both interfaces 256 256 No
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner 	No 256; In redundant mode via both interfaces 256 256
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported 	No 256; In redundant mode via both interfaces 256 256 No No
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium 	No 256; In redundant mode via both interfaces 256 No No Yes
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium 	No 256; In redundant mode via both interfaces 256 256 No No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms
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 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte
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 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time Address area Inputs, max. Outputs, max. User data consistency, max. 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte 1 024 byte
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time Address area Inputs, max. Outputs, max. User data consistency, max. Open IE communication Number of connections, max. 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte 1 024 byte 46
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time Address area Inputs, max. Outputs, max. User data consistency, max. 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte 1 024 byte 46 0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533,
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time Address area Inputs, max. Outputs, max. User data consistency, max. Open IE communication Number of connections, max. Local port numbers used at the system end 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte 1 024 byte 46 0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
 Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. of which in line, max. Activation/deactivation of IO Devices IO Devices changing during operation (partner ports), supported Device replacement without swap medium Send cycles Updating time Address area Inputs, max. Outputs, max. User data consistency, max. Open IE communication Number of connections, max. 	No 256; In redundant mode via both interfaces 256 256 No No Yes 250 µs, 500 µs, 1 ms, 2 ms, 4 ms 250 µs to 512 ms, minimum value depends on the number of configured user data and the configured single or redundant mode 8 kbyte 8 kbyte 1 024 byte 46 0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533,

Interface type	PROFIBUS DP		
Number of connection resources	32		
Interface types			
• RS 485	Yes		
 Output current of the interface, max. 	150 mA		
Protocols			
PROFIBUS DP master	Yes		
PROFIBUS DP slave	No		
PROFIBUS DP master			
Number of connections, max.	16		
Transmission rate, max.	12 Mbit/s		
Number of DP slaves, max.	125		
Services	125		
— PG/OP communication	Yes		
	Yes		
— Routing			
— Global data communication	No		
— S7 basic communication	No		
— S7 communication	Yes		
— S7 communication, as client	Yes		
 — S7 communication, as server 	Yes		
— Equidistance	No		
 — Isochronous mode 	No		
- SYNC/FREEZE	No		
 Activation/deactivation of DP slaves 	No		
 Direct data exchange (slave-to-slave 	No		
communication)			
— DPV0	Yes		
— DPV1	Yes		
Address area			
— Inputs, max.	8 kbyte		
— Outputs, max.	8 kbyte		
User data per DP slave			
— User data per DP slave, max.	244 byte		
— Inputs, max.	244 byte		
— Outputs, max.	244 byte		
— Slots, max.	244		
— per slot, max.	128 byte		
4. Interface			
Interface type	Pluggable synchronization submodule (FO)		
Plug-in interface modules	Synchronization modules 6ES7960-1AA06-0XA0 or 6ES7960-1AB06-		
Flug-III Interface modules	0XA0		
5. Interface			
Interface type	Pluggable synchronization submodule (FO)		
Plug-in interface modules	Synchronization modules 6ES7960-1AA06-0XA0 or 6ES7960-1AB06- 0XA0		
	UXAU		
Protocols			
Redundancy mode			
Media redundancy			
 — Switchover time on line break, typ. 	200 ms		
 — Number of stations in the ring, max. 	50		
SIMATIC communication			
S7 routing	Yes		
Open IE communication			
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs		
 — Number of connections, max. 	94		
— Data length, max.	32 kbyte		
— several passive connections per port,	Yes		
supported			
• ISO-on-TCP (RFC1006)	Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs		
- Number of connections, max.	94		
— Data length, max.	32 kbyte; 1 452 bytes via CP 443-1 Adv.		
• UDP	Yes; via integrated PROFINET interface and loadable FBs		
- Number of connections, max.	94		
— Data length, max.	1 472 byte		
	.,		

Web server	
supported	No
Isochronous mode	
Equidistance	No
communication functions / header	
PG/OP communication	Yes
Number of connectable OPs without message	95
processing	
 Number of connectable OPs with message 	95; When using Alarm_S/SQ and Alarm_D/DQ
processing	
Data record routing Global data communication	Yes
supported	No
S7 basic communication	
• supported	No
S7 communication	
 supported 	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	64 kbyte
User data per job (of which consistent), max.	462 byte; 1 variable
S5 compatible communication	Ves: (via CD may, 10 and EC AC, SEND and EC AC, DEC)()
supportedUser data per job, max.	Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte
 User data per job (of which consistent), max. 	240 byte
Number of simultaneous AG-SEND/AG-RECV	64/64
orders per CPU, max.	
Standard communication (FMS)	
supported	Yes; Via CP and loadable FB
Number of connections	
• overall	96
usable for PG communication	1
 reserved for PG communication adjustable for PG communication 	1 0
 — adjustable for PG communication, max. usable for OP communication 	U Contraction of the second se
— reserved for OP communication	1
- adjustable for OP communication, max.	0
usable for S7 basic communication	
- reserved for S7 basic communication	0
— adjustable for S7 basic communication, max.	0
 usable for S7 communication 	
- reserved for S7 communication	0
— adjustable for S7 communication, max.	0
usable for routing	
— reserved for routing	0
— adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	95; Max. 47 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm, Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)
Symbol-related messages	No
SCAN procedure	No
Program alarms	Yes
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Alarm 8-blocks	Yes
Number of instances for alarm 8 and S7	10 000
communication blocks, max.	4 000
• preset, max.	1 200
Process control messages	Yes
Number of archives that can log on simultaneously (SFB 37 AR_SEND)	64
Test commissioning functions	
Status block	Yes
Single step	Yes
U =P	

Standarda Yes • Standarda, approvals, certification Yes • Ambient ende Yes • Procing Yes • Number of variables, max. 3200 • Procing Yes • Number of variables, max. 3200 • each yes Yes • Number of variables, max. 3200 • each sead out Yes • analyse fraction reliable of variables and sead out Yes • Control Yes • Unit class A, for use in inductrial areas Yes • Unit class A, for use in sead on table interference acc. to EN 65 011 Yes • Init. 70 °C ;= Timis. 70 °C ; • Init. 70 °C ;= Timis. 70 °C ; • Init. 70 °C ; 70 °C ; • Init. 70 °C ; 70 °C ; • Init. 70 °C ; 70 °	Number of breakpoints	16
Variables (injusticulture), max. 70 Forcing (injusticulture), bit memories, distributed I/Os, timers, counters (injusticulture), bit memories, distributed I/Os, timers, counters (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), 70 Forcing (inju	· ·	
Variables (injusticulture), max. 70 Forcing (injusticulture), bit memories, distributed I/Os, timers, counters (injusticulture), bit memories, distributed I/Os, timers, counters (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), bit memories, distributed I/Os (inters, counters), 70 Forcing (injusticulture), 70 Forcing (inju		Yes: Up to 16 variable tables
Number of variables max. 70 Forcing, variables max. Forcing, variable		
Forcing Yes • Forcing variables input/soutputs, bit memories, distributed I/Os • Number of variables, max. 512 Diagnosis buffer Yes • Porsent Yes • Number of entries, max. 3.200 - adjustable Yes - adjustable Yes - preset 120 Service data Yes • can be read out Yes EMG Emission of radio inferference acc. to EN 55.011 • Limit class A, for use in industrial areas Yes Ambient conditions Yes Ambient conditions Yes Ambient conditions 70 °C; = Tmix, @ 60°C for UL/ATEXIFM and safety-related application • min. 40 °C • Mobient intemperature during operation relating to see level 500 m • Inin. Tmax. 1140 PPa 795 PPa 650 PFa / (1000 m + 2000 m) // Tmin (Tmax 1140 PPa		
Forcing variables in present		
 Forcing, variables, max. Number of entries, max. Present Present Aubient of entries, max. adjustable resol Service data can be read out Yes Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 011 Entries of radio interference acc, to EN 85 010 Time, Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra 795 Pra 658 Pra (+2000 m +2000 m) // Time Timex at 1140 Pra		Yes
• Number of variables, max. 512 Dagnostic fullari • present • Present 3200 - a dytasble Yes • and present 120 Service data • Yes • Can be read out Yes • Class B, for use in industrial areas No Standards, approvals, cartificates • Yes • CE mark Yes Ambient lemperature during operation • Init. • Init. - 25 °C; = Tmin • Init. - 25 °C; = Commax • Init. - 25 °C; = Commax • Inititude - 00 °C	•	Inputs/outputs, bit memories, distributed I/Os
Diagnostic buffer • present • adjustable - adjustable - present 120 Service data • can be read out Persent • Can be read out Persent • Can be read out • Can be read out • Can tradic interference acc. to EN 55 011 • Limit class B, for use in insidential areas • Signaderia, approvals, certificates • Can max. • Ambient conditions Ambient conditions • Ambient conditions (Can area in the sidential areas) • Inin. -25 °C; = Timin • max. 70 °C; • Ambient temperature during operation -40 °C • min. -25 °C; = Timin • min. -20 °C; • Ambient temperature during storage/transportation -0 °C • min. -0 °C • max		
Yes Number of entries, max.		
 Number of entires, max. 3.200 - equisable - preset 120 Sented data - can be read out Yes - Emission of radio interference acc. to EN 55.011 - Limit class A, for use in industrial areas - Limit class A, for use in industrial areas No Stantderds, approvals, certificates - Control and the read out - Cast Same - Cast Same - Cast Same - To biologically active substances according to EN 60021-3.3 - To chemically active substances according to EN 60021-3.3 - To chemically active substances according to EN 60021-3.3 - To chemically active substances according to EN 60021-3.3 - To chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.3 - No chemically active substances according to EN 60021-3.4 - No thereinally active substances according to EN 60021-3.4 - No thereinally active substances according to EN 60021-3.4 - No chemically active substances according to EN 60021-3.4 - No thermically active substances according to EN 60021-3.4 - No thermically active substances according to EN 60021-3.4 - No thereinal		Yes
	•	3 200
		Yes
Service data Yes EMC Emcson of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas No Yes Limit class A, for use in residential areas No Yes Limit class A, for use in residential areas No Yes Limit class A, for use in residential areas No Yes Limit class A, for use in residential areas No Yes Limit class A, for use in residential areas No Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential reas Yes Limit class A, for use in residential transportation Yes Limit class A, for use in residential transportation Yes Limit class A, for use in residential transportation Yes Limit class	-	120
EMC Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas No Standards, approvals, cortificates CE mark Yes Ambient conditions Ambient emperature during operation • min. -25 °C; = Tmin • max. 70 °C Antibuet temperature during storage/transportation • min. -0 °C • min. -0 °C • Installation altitude above sea level • Ambient air temperature-barometric pressure- altitude • On biologically active substances according to EN 60721-3.3 • To biologically active substances according to EN 60721-3.4 •	· · · · · · · · · · · · · · · · · · ·	
Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in industrial areas No Standards, approvals, certificates Yes CE mark Yes Ambient conditions Yes Ambient conditions 25 °C; = Tmin • min. -0 °C • min. -0 °C • max. 70 °C Altitude during operation relating to sea level -0 °C • installation altitude above sea level, max. -40 °C • nax. 70 °C Altitude during operation relating to sea level -0 °C • installation altitude above sea level, max. -40 °C • Ambient air temperature-barometric pressure-altitude -10 °C • With condensation, tested in accordance with IEC -00068-2-38, max. © eotomically active substances according to EN 60721-3-3 -10 °C • No 60721-3-3 -10 °C • The inclusitial process technology -10 °C - To inchanicity active substances according to EN 60721-3-3 Yes; Class 32 on request • No Boologically active substances according to EN 60721-3-4 Yes; Class 53 (and, lasd, dust, *	● can be read out	Yes
Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in industrial areas No Standards, approvals, certificates Yes CE mark Yes Ambient conditions Yes Ambient conditions 25 °C; = Tmin • min. -0 °C • min. -0 °C • max. 70 °C Altitude during operation relating to sea level -0 °C • installation altitude above sea level, max. -40 °C • nax. 70 °C Altitude during operation relating to sea level -0 °C • installation altitude above sea level, max. -40 °C • Ambient air temperature-barometric pressure-altitude -10 °C • With condensation, tested in accordance with IEC -00068-2-38, max. © eotomically active substances according to EN 60721-3-3 -10 °C • No 60721-3-3 -10 °C • The inclusitial process technology -10 °C - To inchanicity active substances according to EN 60721-3-3 Yes; Class 32 on request • No Boologically active substances according to EN 60721-3-4 Yes; Class 53 (and, lasd, dust, *	EMC	
Limit class A, for use in industrial areas No Limit class B, for use in residential areas No Standards, sprovals, certificates CE mark Yes Ambient temperature during operation emin. emi		
• Limit class B, for use in residential areas No Standards, approvals, certificates		Yes
Standards, approvals, certificates CE mark Yes Ambient conditions -25 °C; = Tmin Ambient temperature during operation -25 °C; = Tmin • max. 70 °C; = Tmax; @ 60°C for UL/ATEX/FM and safety-related application Ambient temperature during storage/transportation -40 °C • max. 70 °C Ambient temperature during storage/transportation -40 °C • Installation altitude average/transportation relating to sea level 5000 m • Installation altitude average/transportation relating to sea level, max. 5000 m • Installation altitude average/transportation relating to sea level, max. 5000 m • Installation altitude average/transportation relating to sea level, max. 5000 m • Installation altitude average/transportation -40 °C • Installation altitude average/transportation -		
CE mark Yes Ambient conditions		
Ambient conditions Ambient temperature during operation • min. -25 °C; = Tmin • min. 70 °C; = Tmax; @ 60 °C for UL/ATEX/FM and safety-related application • min. -40 °C • min. -40 °C • max. 70 °C Altitude during operation relating to sea level -40 °C • Installation altitude above sea level, max. 5 000 m • Ambient air temperature-barometric pressure- altitude 5 000 m • With condensation, tested in accordance with IEC 60068-2-38, max. 5000 m // Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin (Tmax -2 0 K) at 658 hPa (-2 000 m +5 000 m) // Tmin		N
Ambient temperature during operation • min. -25 °C; = Tmin • max. 70 °C; = Tmax; @ 60°C for UL/ATEX/FM and safety-related application Ambient temperature during storage/transportation -40 °C • max. 70 °C Attitude during operation relating to sea level 5000 m • Installation altitude above sea level, max. 5000 m • Ambient air temperature-barometric pressure-attitude Tmin Tmax at 1140 hPa 795 hPa (-1000 m +2 000 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m (Tmax -20 K) at 55 hPa (-2000 m +3 500 m) // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ // Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ (Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 000 m (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ (Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ (Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ (Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ (Tmin (Tmax -20 K) at 55 hPa (-2000 m +3 500 m)/ .		Yes
 min. -25 °C; = Tmin 70 °C Tmin. To °C Tmin. To °C This. 40 °C 70 °C Attitude during operation relating to sea level Installation altitude above sea level, max. Ambient diremperature-barometric pressure- altitude Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Inin Tmax at 1 140 hPa 795 hPa (-1 000 m + 2 000 m) // Tmin (Tmax - 10 k) at 795 hPa 658 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 3 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 20 k) at 795 hPa 698 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 20 k) at 798 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 20 k) at 798 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 20 k) at 798 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 10 k) at 798 hPa (+2 000 m + 2 000 m) // Tmin (Tmax - 10 k) at 798 hPa (+2 000 m + 2 000 m) // Tmin (Tmax	Ambient conditions	
 max. 70 °C; = Tmax; @ 60°C for UL/ATEX/FM and safety-related application Ambient temperature during storage/transportation inin. ininin. ininin. ininin. ini	Ambient temperature during operation	
Ambient temperature during storage/transportation	● min.	-25 °C; = Tmin
 min	• max.	70 °C; = Tmax; @ 60°C for UL/ATEX/FM and safety-related application
 max. 70 °C Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Installative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems I to biologically active substances according to EN 60721-3-3 I o mechanically active substances according to EN 60721-3-3 Use on ships/at sea I o themically active substances according to EN 60721-3-6 I o biologically active substances according to EN 60721-3-6 Ves; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request I to biologically active substances according to EN 60721-3-6 Ves; Class 6G3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6G3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6G3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6G3 incl. sand, dust, * EN 60654-4 EN 60654-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Yes; Class 3 (excluding trichlorethylene) Yes; Class 3 (excluding trichlorethylene) Yes; Class 3 (excluding trichlorethylene) The supplied plug covers must remain in place over the unused intefraces during operation! ANSI/IS	Ambient temperature during storage/transportation	
Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure- altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure- altitude • Installation altitude above sea level, max. • Motion altitude • Motion altitude • With condensation, tested in accordance with IEC 60068-2-38, max. • Not isologically active substances according to EN 60721-3-3 - to biologically active substances according to EN 60721-3-3 - to biologically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60654-4 - Towe substances according to EN 60654-4 - Towe substances acc. to EN 60654-4 - Note re	● min.	
 Installation altitude above sea level, max. Ambient air temperature-barometric pressure- altitude Timi Tmax t 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +2 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 10 K) at 795 hPa (-1 000 m +2 000 m above sea level permissible Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-6 Usa on ships/at sea — to biologically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 605721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 6054-4 — Environmental conditions for process, measuing and control systems acc. to ANSI/ISA- 71.04 Pote regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability 	• max.	70 °C
 Ambient air temperature-barometric pressure- altitude Ambient air temperature-barometric pressure- altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 755 hPa 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax - 10 K) at 755 hPa 658 hPa (-2 000 m +3 000 m); with "F-System" applications max. +2 000 m above sea level permissible Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 Use on ships/at sea - to biologically active substances according to EN 60721-3-3 Use on ships/at sea - to chemically active substances according to EN 60721-3-6 Use on ships/at sea - to chemically active substances according to EN 60721-3-6 Wes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6C3 incl. sand, dust; * With contensically active substances according to EN 60721-3-6 Usage in industrial process technology Against chemically active substances acc. to EN 6054-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Yes; Class 1 (excluding trichlorethylene) Yes; Level CX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60564-4 and ANSI	Altitude during operation relating to sea level	
attitude (Tmax - 10 K) at 755 hPa 658 hPa 568 hPa (+2 000 m + 3 500 m)/ Train (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m + 5000 m); with * With condensation, tested in accordance with IEC 60086-2-38, max. 20 K) at 658 hPa 658 hPa 658 hPa 658 hPa 540 hPa (+3 500 m); with * With condensation, tested in accordance with IEC 60086-2-38, max. Use in stationary industrial systems - to biologically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-3 - to thenically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-6 Use on ships/at sea - to chemically active substances according to EN 60721-3-6 Ves; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	 Installation altitude above sea level, max. 	5 000 m
 With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Istitionary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — Nother egarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Permark — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability 		(Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m); with
60068-2-38, max. condensation conditions) Resistance Use in stationary industrial systems - to biologically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-3 - to mechanically active substances according to EN 60721-3-3 Use on ships/at sea - to chemically active substances according to EN 60721-3-6 - to mechanically active substances acc. to EN 60654-4 - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 - Note regarding	Relative humidity	
Use in stationary industrial systems		
 to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3 Use on ships/at sea to biologically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology Against chemically active substances acc. to EN 60654-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating - Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability 	Resistance	
EN 60721-3-3 fauna); Class 3B3 on request	Use in stationary industrial systems	
 to chemically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-3 Use on ships/at sea to chemically active substances according to EN 60721-3-6 to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology Against chemically active substances acc. to EN 60654-4 En vinonmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability 		
EN 60721-3-3 (severity degree 3); * — to mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * Use on ships/at sea 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 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); *		fauna); Class 3B3 on request
 to mechanically active substances according to EN 60721-3-3 Use on ships/at sea to biologically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology Against chemically active substances acc. to EN 6054-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Yes; Class 2 for high reliability Yes; Class 2 for high reliability 		
EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Remark — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating • Coatings for printed circuit board assemblies acc. to		
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EN 60721-3-6request— to chemically active substances according to EN 60721-3-6Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *— to mechanically active substances according to EN 60721-3-6Yes; Class 6S3 incl. sand, dust; *Usage in industrial process technology— Against chemically active substances acc. to EN 60654-4Yes; Class 3 (excluding trichlorethylene)— Against chemically active substances acc. to EN 60654-4Yes; Class 3 (excluding trichlorethylene)— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)Remark-Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04* The supplied plug covers must remain in place over the unused interfaces during operation!Conformal coating• Coatings for printed circuit board assemblies acc. toYes; Class 2 for high reliability	· · ·	Yes; Class 6B2 mold and fundal spores (excluding fauna); Class 6B3 on
to chemically active substances according to EN 60721-3-6Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * to mechanically active substances according to EN 60721-3-6Yes; Class 6S3 incl. sand, dust; *Usage in industrial process technology Against chemically active substances acc. to EN 60654-4Yes; Class 3 (excluding trichlorethylene) Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04* The supplied plug covers must remain in place over the unused interfaces during operation!* Conformal coating• Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability		
— to mechanically active substances according to EN 60721-3-6Yes; Class 6S3 incl. sand, dust; *Usage in industrial process technology— Against chemically active substances acc. to EN 60654-4Yes; Class 3 (excluding trichlorethylene)— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)Remark* The supplied plug covers must remain in place over the unused interfaces during operation!Conformal coatingYes; Class 2 for high reliability		
Usage in industrial process technology - Against chemically active substances acc. to EN 60654-4 Yes; Class 3 (excluding trichlorethylene) - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) Remark - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 * The supplied plug covers must remain in place over the unused interfaces during operation! Conformal coating • Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability	— to mechanically active substances according to	
 Against chemically active substances acc. to EN 60654-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 * The supplied plug covers must remain in place over the unused interfaces during operation! * 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 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) Remark — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 * The supplied plug covers must remain in place over the unused interfaces during operation! Conformal coating • Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability		Yes: Class 3 (excluding trichlorethylene)
measuring and control systems acc. to ANSI/ISA- 71.04 concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) Remark - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 * The supplied plug covers must remain in place over the unused interfaces during operation! Conformal coating • Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability	EN 60654-4	
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conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 interfaces during operation! Conformal coating • Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability	Remark	
Coatings for printed circuit board assemblies acc. to Yes; Class 2 for high reliability	conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	
		Yes: Class 2 for high reliability

 Protection against 	fouling acc.	to	EN 60664-3
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• Military testing according to MIL-I-46058C,

Amendment 7

• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Yes; Type 1 protection

Yes; Discoloration of coating possible during service life

Yes; Conformal coating, Class A

configuration / header		
Configuration software		
• STEP 7	Yes	
configuration / programming / header		
Command set	see instruction list	
Nesting levels	7	
 Access to consistent data in process image 	Yes	
 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	
configuration / programming / number of simultaneously	active SFC / header	
- RD_REC	8	
WR_REC	8	
— WR_PARM	8	
— PARM_MOD	1	
WR_DPARM	2	
— DPNRM_DG	8	
— RDSYSST	8	
- DP_TOPOL	1	
configuration / programming / number of simultaneously		
- RDREC	8	
— WRREC	8	
Know-how protection		
 User program protection/password protection 	Yes	
Block encryption	Yes; With S7 block Privacy	
Dimensions		
Width	50 mm	
Height	290 mm	
Depth	219 mm	
Weights		
Weight, approx.	995 g	
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