SIEMENS

Data sheet

6ES7416-2XN05-0AB0

*********** Replacement part ******** SIMATIC S7-400, CPU 416-2 Central processing unit with: work memory 5.6 MB, (2.8 MB code, 2.8 MB data), 1st interface MPI/DP 12 Mbit/s, 2nd interface PROFIBUS DP



Figure similar

General information	
Product type designation	CPU 416-2
HW functional status	04
Firmware version	V5.3
Product function	
Isochronous mode	Yes; For PROFIBUS only
Engineering with	
 Programming package 	STEP 7 V5.3 SP2 or higher with HW update
CiR - Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	10 µs
Supply voltage	
Rated value (DC)	
• 24 V DC	No; Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	0.9 A

1.1 A
300 mA; 150 mA per DP interface
90 mA; At each DP interface
4.5 W
5 W
RAM
5.6 Mbyte
2.8 Mbyte
2.8 Mbyte
No
Yes; with Memory Card (FLASH)
64 Mbyte
1 Mbyte
Yes; with Memory Card (RAM)
64 Mbyte
Yes
Yes; all data
No
125 μA; up to 40 °C
125 μA; up to 40 °C 550 μA
550 µA
550 μA See reference manual, module data, Chapter 3.3
550 μA See reference manual, module data, Chapter 3.3 5 V DC to 15 V DC 30 ns
550 μA See reference manual, module data, Chapter 3.3 5 V DC to 15 V DC
550 μA See reference manual, module data, Chapter 3.3 5 V DC to 15 V DC 30 ns
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550 μA See reference manual, module data, Chapter 3.3 5 V DC to 15 V DC 30 ns 30 ns 30 ns 90 ns
550 μA See reference manual, module data, Chapter 3.3 5 V DC to 15 V DC 30 ns 30 ns 30 ns 90 ns 10 000; Number range: 1 to 16000

FC • Number, max. 5 000; Number range: 0 to 7999 • Size, max. 64 kbyte OB • Number, max. see instruction list • Size, max. 64 kbyte • Number of free cycle OBs 1: 0B 1 • Number of free cycle OBs 1: 0B 1 • Number of free cycle OBs 4: 0B 20-23 • Number of opcess alarm OBs 9: 0B 30-38 (shortes cycle that can be set = 500 µs) • Number of process alarm OBs 3: 0B 55-57 • Number of process alarm OBs 3: 0B 55-57 • Number of multicomputing OBs 1: 0B 80 • Number of suchronous mode OBs 1: 0B 80 • Number of suchronous error OBs 1: 0B 80 • Number of suchronous error OBs 1: 0B 80 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 121, 122 • Number of synchronous error OBs 2: 0B 12, 122 • Storner 2: 048 • Number 1: 0: 0 • Number 1: 0: 0 • opper limit 2: 047	• Size, max.	64 kbyte
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Number of cyclic interrupt DBs9. OB 30-38 (shortest cycle that can be set = 500 μs)Number of process alarm OBs8: OB 40-47Number of process alarm OBs3: OB 55-57Number of isochronous mode OBs4: OB 61-64Number of background OBs1: OB 60Number of startup OBs3: OB 100-102Number of startup OBs3: OB 100-102Number of synchronous error OBs9: OB 80-88Number of synchronous error OBs2: OB 121, 122NumberPer priority class24additional within an error OB2S7 counter2048- adjustableYes- adjustableYes- lower limit0- upper limit2 047- preset2 047- upper limit999IEC counterYes- forsentYes- lower limit0- upper limit2 047- preset7- lower limit0- upper limit2 047- preset7- lower limit0- upper limit999- StrinesYes- NumberUnlimited (limited only by RAM capacity)S7 timesYes- Number2 048	 Number of time alarm OBs 	8; OB 10-17
• Number of process alarn OBs8, 0B 40-47• Number of DPV1 alarn OBs3, 0B 55-57• Number of isochronous mode OBs4, 0B 61-64• Number of multicomputing OBs1, 0B 80• Number of background OBs1, 0B 90• Number of startup OBs3, 0B 100-102• Number of synchronous error OBs9, 0B 80-88• Number of synchronous error OBs2, 0B 121, 122• Number of synchronous error OBs2, 0B 121, 122• Number of synchronous error OBs2, 0B 20, 20, 20, 20, 20, 20, 20, 20, 20, 20,	 Number of delay alarm OBs 	4; OB 20-23
• Number of DPV1 alarm OBS3, OB 55-57• Number of isochronous mode OBS4, OB 61-64• Number of multicomputing OBS1, OB 60• Number of background OBS1, OB 90• Number of startup OBS3, OB 100-102• Number of asynchronous error OBS9, OB 80-88• Number of synchronous error OBS2, OB 121, 122• Number of synchronous error OBS2• additional within an error OB2• dotter sterentivity2• Courters, timers and their retentivity2• Courters, timers and their retentivity2• Number2• Number2• Number2• Number2• our per limit0- olover limit0- olover limit2- lover limit2- lover limit9- lover limit9- presetYesEcounterYes• presentYes• numberSFB• NumberSFB• NumberSFB• NumberSFB• Number2• Number2• Number2• Number2• NumberSFB• Number10• Number2• Number2• Number3• StenetivityYes• Number3• Number3• Number3• Number4• Number4• Number4• Number<	 Number of cyclic interrupt OBs 	9; OB 30-38 (shortest cycle that can be set = 500 μ s)
• Number of isochronous mode OBs4: OB 61-64• Number of multicomputing OBs1: OB 60• Number of background OBs1: OB 90• Number of startup OBs3: OB 100-102• Number of asynchronous error OBs9: OB 80-88• Number of synchronous error OBs2: OB 121, 122• Number of synchronous error OBs2• Auting depth2• Currers, timers and their retentivity2• Number2 048• Number of Internet VI2 048• Number of Internet VI2 048• Number of Internet VI2 047• Lower limit0• preset2 047• Lower limit0 1• preset limit0• preset limit0 1• preset limit99• Number2 047• Lower limit0• preset limit0• preset limit0• preset limit0• nupper limit99• nupper limit99• nupper limit99• nupper limit99• nupper limit0• nupper limit99• nupper limit99• nupper limit99• nupper limit91• nupper limit91• nupper limit92• number92• number92• number92• number92• number92• number92• number92• number92• number92 <td> Number of process alarm OBs </td> <td>8; OB 40-47</td>	 Number of process alarm OBs 	8; OB 40-47
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Number of background OBs1; OB 90Number of startup OBs3; OB 100-102Number of asynchronous error OBs9; OB 80-88Number of synchronous error OBs2; OB 121, 122Nesting depth24e per priority class24e additional within an error OB2Counters, timers and their retentivityS7 counter• Number2 048Retentivity4- adjustableYes- lower limit0- upper limit2 047- preset2 047Counting range0- upper limit999IEC counterYes• TypeSFB• NumberSFB• NumberSFB• Number2 048	 Number of isochronous mode OBs 	4; OB 61-64
Number of startup OBs3: OB 100-102Number of startup OBs9: OB 80-88Number of synchronous error OBs2; OB 121, 122Nesting depth24• per priority class24• additional within an error OB2Counters, timers and their retentivity§ Counters, timers and their retentivity2 048S7 counter2 048• Number2 047- adjustable0- upper limit2 047- presetZ 0 to Z 7Counting range999IEC counterYes• presentNes• TypeSFB• NumberUnlimited (imited only by RAM capacity)\$7 times2 048	 Number of multicomputing OBs 	1; OB 60
• Number of asynchronous error OBs9: OB 80-88• Number of synchronous error OBs2: OB 121, 122Nesting depth24• per priority class24• additional within an error OB2Counters, timers and their retentivityS7 counter2 048• Number2 048• Number2 048• number2 048• number2 047- olwer limit0- upper limit2 047- preset2 0 to Z 7• Counting range999• Ec counterYes• presentYes• TypeSFB• NumberSFB• NumberSFB• Number2 048• Number2 048• present0• present0• present0• present0• present0• NumberSFB• NumberSFB• Number2 048• Number2 048	 Number of background OBs 	1; OB 90
• Number of synchronous error OBs2; OB 121, 122Nesting depth• per priority class24• additional within an error OB2Counters, timers and their retentivity6 Number2 048Retentivity2 048- adjustableVes- lower limit0- upper limit2 047- presetZ 0 to Z 7Counter999EC counter999EC counterYes• presentYes- lower limit0- upper limitSFB• presentYes• fypeSFB• NumberSFB• Number2 048• Number2 048	 Number of startup OBs 	3; OB 100-102
Nesting depth 24 • additional within an error OB 2 counters, timers and their retentivity 2 S7 counter 2048 etentivity 2048 Retentivity - adjustable - lower limit 0 - upper limit 2047 - preset Z 0 to Z 7 Counter 999 EC counter 999 EC counter SFB • Number SFB • Number SFB • Number 2048	 Number of asynchronous error OBs 	9; OB 80-88
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• additional within an error OB 2 Counters, timers and their retentivity 2 S7 counter 2 048 Retentivity 2 048 Retentivity - adjustable - adjustable Yes - lower limit 0 - upper limit 2 047 - preset Z 0 to Z 7 Counting range 999 IEC counter 999 IEC counter Yes • present Yes • Type SFB • Number Ves ST times Ves • Number 2 048	Nesting depth	
Counters, timers and their retentivity \$7 counter • Number 2 048 Retentivity - adjustable - adjustable Yes - lower limit 0 - upper limit 2 047 - preset Z 0 to Z 7 Counting range - - lower limit 0 - upper limit 999 IEC counter 999 IEC counter Yes • Type SFB • Number Unlimited (limited only by RAM capacity) \$7 times 2 048	 per priority class 	24
S7 counter2 048RetentivityYes- adjustableYes- lower limit0- upper limit2 047- presetZ 0 to Z 7Counting range999IEC counter999IEC counterYes• presentYes• presentSFB• NumberUnlimited (limited only by RAM capacity)S7 times2 048Retentivity2 048	 additional within an error OB 	2
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- lower limit0- upper limit999IEC counter• presentYes• TypeSFB• NumberUnlimited only by RAM capacity)S7 times• Number2 048	— preset	Z 0 to Z 7
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S7 times • Number Retentivity	• Туре	SFB
• Number 2 048 Retentivity	Number	Unlimited (limited only by RAM capacity)
Retentivity	S7 times	
	Number	2 048
- adjustable Yes	Retentivity	
	— adjustable	Yes

— lower limit	0
— upper limit	2 047
	No times retentive
— preset	
Time range	10 ms
— lower limit	9 990 s
— upper limit IEC timer	9 990 5
	Yes
• present	SFB
• Type	Unlimited (limited only by RAM capacity)
• Number	Ommitted (infinited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total	Total working and load memory (with backup battery)
Flag	
• Number, max.	16 kbyte; Size of bit memory address area
Retentivity available	Yes
Retentivity preset	MB 0 to MB 15
 Number of clock memories 	8; in 1 memory byte
Local data	
• adjustable, max.	32 kbyte
• preset	16 kbyte
Address area	
I/O address area	
Inputs	16 kbyte
Outputs	16 kbyte
Process image	
 Inputs, adjustable 	16 kbyte
 Outputs, adjustable 	16 kbyte
 Inputs, default 	512 byte
Outputs, default	512 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	
Integrated power supply	No
Number of expansion units, max.	21
connectable OPs	63
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	
 Number of connectable IMs (total), max. 	6
 Number of connectable IM 460s, max. 	6
 Number of connectable IM 463s, max. 	4; IM 463-2
Number of DP masters	
● integrated	2
● via CP	10; CP 443-5 Extended
● via IM 467	4
• Mixed mode IM + CP permitted	No; IM 467 not suitable for use with CP 443-5 Ext. and CP 443-1 EX4x, EX20, GX20 (in PROFINET IO mode)
• via interface module	0
 Number of pluggable S5 modules (via adapter capsule in central device), max. 	6
Number of IO Controllers	
● integrated	0
● via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20, max. 4 in central controller
Number of operable FMs and CPs (recommended)	
● FM	Limited by number of slots and number of connections
• CP, PtP	CP 440: Limited by number of slots; CP 441: limited by number of connections
 PROFIBUS and Ethernet CPs 	14; Of which 10 CPs max. or IMs as DP master, 4 PROFINET controller maximum
Slots	
 required slots 	1
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 (unbuffered), max.	8.6 s; For 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 	No; Via CP
• to IF 964 DP	No
Time difference in system when synchronizing via	
● MPI, max.	200 ms
Interfaces	
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFIBUS DP
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Optical interface	No
1. Interface	
Interface type	Integrated
Dhusias	RS 485 / PROFIBUS + MPI
Physics	
Isolated	Yes
·	
Isolated	Yes
Isolated Power supply to interface (15 to 30 V DC), max.	Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols	Yes 150 mA
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI	Yes 150 mA Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master	Yes 150 mA Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes 150 mA Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max.	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services	Yes 150 mA Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Ye

 Number of connections, max. 	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
 Number of DP slaves, max. 	32
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
— Global data communication	No
— S7 basic communication	Yes
— S7 communication	Yes
- S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes
- SYNC/FREEZE	Yes
— Activation/deactivation of DP slaves	Yes
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 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
PROFIBUS DP slave	
 Number of connections 	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
 Transmission rate, max. 	12 Mbit/s
 automatic baud rate search 	No
 Address area, max. 	32; Virtual slots
 User data per address area, max. 	32 byte
— of which consistent, max.	32 byte
Services	
— PG/OP communication	Yes; with interface active
— Routing	Yes; with interface active
— Global data communication	No
— S7 basic communication	No

— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
 — Direct data exchange (slave-to-slave communication) 	No
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte

2. Interface	
Interface type	Integrated
Physics	RS 485 / PROFIBUS
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	150 mA
Number of connection resources	32
Protocols	
 PROFIBUS DP master 	Yes
 PROFIBUS DP slave 	Yes
PROFIBUS DP master	
 Number of connections, max. 	32
 Transmission rate, max. 	12 Mbit/s
 Number of DP slaves, max. 	125
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
— Global data communication	No
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes
- SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
— Direct data exchange (slave-to-slave	Yes
communication)	
— 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
PROFIBUS DP slave	
Number of connections	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
• Transmission rate, max.	12 Mbit/s
• Address area, max.	32
• User data per address area, max.	32 byte
— of which consistent, max.	32 byte
Services	
— Routing	Yes; with interface active
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
Open IE communication	Via CP 443-1 and loadable FB
ISO-on-TCP (RFC1006)	1 452 bytes via CP 443-1 Adv.
— Data length, max.	1 452 Dytes via CF 445-1 Adv.
Web server	No
supported	INU .
Isochronous mode	
Equidistance	Yes
Number of DP masters with isochronous mode	2
User data per isochronous slave, max.	244 byte
shortest clock pulse	1 ms; 0.5 ms without use of SFC 126, 127
max. cycle	32 ms
Communication functions	
PG/OP communication	Yes
Number of connectable OPs without message processing	63
processing	63; When using Alarm_S/SQ and Alarm_D/DQ
 Number of connectable OPs with message processing 	os, when using Alam_5/SQ and Alam_D/DQ
Data record routing	Yes
Global data communication	
• supported	Yes
 Number of GD loops, max. 	16
 Number of GD packets, transmitter, max. 	16
 Number of GD packets, receiver, max. 	32

 Size of GD packets, max. 	54 byte
 Size of GD packet (of which consistent), max. 	1 variable
S7 basic communication	
supported	Yes
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	1 variable
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	
supported	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
• User data per job, max.	8 kbyte
 User data per job (of which consistent), max. 	240 byte
 Number of simultaneous AG-SEND/AG-RECV orders per CPU, max. 	64/64
Standard communication (FMS)	
supported	Yes; Via CP and loadable FB
Number of connections	
• overall	64
 usable for PG communication 	63
— reserved for PG communication	1
— adjustable for PG communication, max.	0
 usable for OP communication 	63
 reserved for OP communication 	1
 adjustable for OP communication, max. 	0
 usable for S7 basic communication 	62
- reserved for S7 basic communication	0
 — adjustable for S7 basic communication, max. 	0
 usable for S7 communication 	62
— reserved for S7 communication	0
— adjustable for S7 communication, max.	0
 usable for routing 	31
— reserved for routing	0
— adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	63; Max. 63 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	Yes
SCAN procedure	Yes
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 communication blocks, max. 	4 000
• preset, max.	600
Process control messages	Yes
Number of archives that can log on simultaneously (SFB 37 AR_SEND)	32
Number of messages	
• overall, max.	1 024
● in 100 ms grid, max.	128
● in 500 ms grid, max.	512
• in 1000 ms grid, max.	1 024
Number of additional values	
● with 100 ms grid, max.	1
• with 500, 1000 ms grid, max.	10

Test commissioning functions Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
Status/control variable	Yes; Up to 16 variable tables
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
 Number of variables, max. 	70; Status/control
Forcing	
Forcing	Yes
 Forcing, variables 	Inputs, outputs, bit memories, peripheral inputs, peripheral outputs
 Number of variables, max. 	512
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	3 200
— adjustable	Yes
— preset	120
Service data	
● can be read out	Yes
Standards, approvals, certificates	

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CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	ATEX II 3G Ex nA IIC T4 Gc
Ambient conditions	ATEX II 3G Ex nA IIC 14 Gc
	ATEX II 3G Ex nA IIC 14 Gc
Ambient conditions Ambient temperature during operation	
Ambient conditions Ambient temperature during operation • min.	0 °C
Ambient conditions Ambient temperature during operation • min. • max.	0 °C
Ambient conditions Ambient temperature during operation	0 °C
Ambient conditions Ambient temperature during operation	0 °C 60 °C
Ambient conditions Ambient temperature during operation	0 °C 60 °C
Ambient conditions Ambient temperature during operation • min. • max. Configuration Configuration software • STEP 7 Programming	0 °C 60 °C Yes

 System functions (SFC) 	

 System function blocks (SFB) 	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Number of simultaneously active SFCs	
— DPSYC_FR	2; SFC 11; per interface
— D_ACT_DP	8; SFC 12; per interface
— RD_REC	8; SFC 59; per interface
— WR_REC	8; SFC 58; per interface
— WR_PARM	8; SFC 55; per interface
— PARM_MOD	1; SFC 57; per interface
— WR_DPARM	2; SFC 56; per interface
— DPNRM_DG	8; SFC 13; per interface

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see instruction list

- DP_TOPOL	1; SFC 103; per interface
Number of simultaneously active SFBs	
- RDREC	8; SFB 52; per interface, but not more than 32 across all external interfaces
— WRREC	8; SFB 53; per interface, but not more than 32 across all external interfaces
Know-how protection	
 User program protection/password protection 	Yes
Dimensions	
Dimensions Width	25 mm
	25 mm 290 mm
Width	
Width Height	290 mm
Width Height Depth	290 mm