**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

CPU 416-2	Figure similar	
HW functional status  O4 Firmware version  I sochronous mode  I sochronous mode  Engineering with  Programming package  STEP 7 V.5.3 SP2 or higher with HW update  CiR - Configuration in RUN  CiR synchronization time, basic load  CiR synchronization time, time per I/O byte  Supply voltage  Rated value (DC)  Input current  from backplane bus 5 V DC, max.  I from backplane bus 5 V DC, max.  I from backplane bus 5 V DC, max.  I from backplane bus 5 V V C, max.  I from loackplane bus 5 V V C, max.  I from loackplane bus 5 V V C, max.  I from loackplane bus 5 V DC, max.  Power loss, Vp.  Hemory  Type of memory  I right grated (for program)  I rilegrated (for data)  Expandable EEPROM  Expandable EEPROM  Expandable FEPROM, max.  I highly expandable FEPROM, max.  I highly expandable RAM.  Expa	General information	
Firmware version V5.3 Product function  • Isochronous mode Programming package STEP 7 V5.3 SP2 or higher with HIW update  CiR - Configuration in RUN CiR synchronization time, basic load CiR synchronization time, basic load 100 ms CiR synchronization time, time per I/O byte 10 µs  Supply voltage Rated value (DC) Input current from backplane bus 5 V DC, typ. 1.1 A from backplane bus 5 V DC, max. 1.1 A from backplane bus 24 V DC, max. 4.5 M Description of the program of	Product type designation	CPU 416-2
Product function  Isochronous mode Isochronous mode Programming package STEP 7 V5.3 SP2 or higher with HW update  CIR - Configuration in RUN  CIR synchronization time, basic load CIR synchronization time, time per I/O byte 10 µs  Supply votage Rated value (DC) Power supply via system power supply Input current  from backplane bus 5 V DC, typ. 0.9 A from backplane bus 5 V DC, max. 1.1 A from backplane bus 24 V DC, max. 90 mA; At each DP interface  Power loss.  Power loss, typ.  Memory  Type of memory  Work memory  integrated (for program) integrated (for data) expandable EEPROM expandable FEPROM, max. 1 Mbyte expandable FEPROM, max. 1 Mbyte expandable RAM, max. expandable RAM expandable R	HW functional status	04
● Isochronous mode 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) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. 1.1 A  from backplane bus 5 V DC, max. 90 mA; 150 mA per DP interface  Power loss, typ.  Memory  Type of memory  RAM  Work memory  ● integrated (for program) • integrated (for program) • integrated (for data) • expandable FEPROM • expandable FEPROM • expandable FEPROM, max. • integrated RAM, max. • integrated RAM, max. • expandable RAM, max. • expandable RAM, max. • expandable RAM, max. • present • with battery • without battery • present • without battery • wi	Firmware version	V5.3
Engineering with  ● Programming package  CiR - Configuration in RUN  CiR synchronization time, basic load  Journal of the programming package  Rated value (DC)  Input current  from backplane bus 5 V DC, typ.  from backplane bus 5 V DC, max.  Infom backplane bus 5 V DC, max.  Journal of the programming package  Power loss, typ.  Wern loss, typ.  Integrated (for program)  ■ integrated (for fotata)  ■ expandable FEPROM  ■ expandable FEPROM  ■ expandable FEPROM, max.  ■ integrated RAM, max.  ■ integrated RAM, max.  ■ integrated RAM, max.  ■ expandable RAM, max.  ■ expandable RAM, max.  ■ present  ■ without battery  ■ RAM  100 ms  10	Product function	
Programming package  CiR - Configuration in RUN  CiR synchronization time, basic load  CiR synchronization time, time per I/O byte  Supply voltage  Rated value (DC)  Input current  from backplane bus 5 V DC, typ.  from backplane bus 5 V DC, max.  from backplane bus 5 V DC, max.  1.1 A  from backplane bus 24 V DC, max.  from backplane bus 5 V DC, max.  90 mA; 150 mA per DP interface  from interface 5 V DC, max.  Power loss, typ.  Memory  Type of memory  e integrated (for program)  integrated (for program)  integrated (for program)  integrated (for data)  e expandable FEPROM  e expandable FEPROM  e expandable FEPROM, max.  integrated RAM, max.  integrat	<ul> <li>Isochronous mode</li> </ul>	Yes; For PROFIBUS only
CIR - Configuration in RUN  CIR synchronization time, basic load  CIR synchronization time, time per I/O byte  10 µs  Supply voltage  Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max.  1.1 A  from backplane bus 5 V DC, max. 300 mA; 150 mA per DP interface  from interface 5 V DC, max. 90 mA; 34 each DP interface  Power loss  Power loss  Power loss  Power loss  ### AM	Engineering with	
CIR synchronization time, basic load CIR synchronization time, time per I/O byte Supply voltage Rated value (DC) Input current from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 5 V DC, max. 1.1 A from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface from interface 5 V DC, max. 90 mA; At each DP interface Power loss Power loss, typ. 4.5 W Memory Type of memory Work memory  • integrated (for program) • integrated (for data) • expandable CIP of data) • expandable FEPROM • expandable FEPROM, max. • integrated RAM, max. • integrated RAM, max. • expandable RAM, max. • expandable RAM, max. • expandable RAM, max. • Present • with battery • without battery • No	<ul> <li>Programming package</li> </ul>	STEP 7 V5.3 SP2 or higher with HW update
CIR synchronization time, time per I/O byte  Supply voltage Rated value (DC) Power supply via system power supply Input current from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. 90 mA; At each DP interface  Power loss, typ.  4.5 W  Memory  Type of memory  Nork memory  integrated (for program) integrated (for data) expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM, max. expandable FEPROM, max. expandable RAM expandable RAM expandable RAM expandable RAM expandable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandable RAM, expandable RAM, expandable RAM, expand	CiR - Configuration in RUN	
Rated value (DC) Power supply via system power supply  Input current  from backplane bus 5 V DC, typ. 0.9 A  from backplane bus 5 V DC, max. 1.1 A  from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface  from interface 5 V DC, max. 90 mA; At each DP interface  Power loss.  Power loss, typ. 4.5 W  Memory  Type of memory RAM  Work memory  integrated (for program) 2.8 Mbyte integrated (for data) 2.8 Mbyte integrated (for data) 2.8 Mbyte expandable FEPROM expandable FEPROM, max. 64 Mbyte  expandable FEPROM, max. 64 Mbyte  integrated RAM, max. 1 Mbyte expandable RAM expandable RAM Yes; with Memory Card (RAM) expandable RAM, max. 64 Mbyte  expandable RAM, max. 1 Mbyte  expandable RAM, max. 64 Mbyte  expandable RAM, max. 64 Mbyte  expandable RAM, max. 94 Mbyte  expandable RAM, max. 96 Mbyte  expandable RAM, max. 97 Yes; with Memory Card (RAM) expandable RAM, max. 97 Yes; with Memory Card (RAM) expandable RAM, max. 98 Mbyte  expandable RAM, max. 99 m	CiR synchronization time, basic load	100 ms
Rated value (DC) Power supply via system power supply Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. 1.1 A  from backplane bus 2 V DC, max. 300 mA; 150 mA per DP interface  from interface 5 V DC, max. 90 mA; At each DP interface  Power loss  Power loss, typ. 4.5 W  Memory  Type of memory  integrated (for program) integrated (for fordata) expandable (for data) expandable FEPROM expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM expandable RAM, max.  full byte expandable RAM expandabl	CiR synchronization time, time per I/O byte	10 µs
Input current  from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface from interface 5 V DC, max. 90 mA; At each DP interface  Power loss  Power loss, typ. 4.5 W  Memory  Type of memory  integrated integrated (for program) integrated (for data) expandable expandable  Load memory  expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM, max. integrated RAM expandable RAM ex	Supply voltage	
from backplane bus 5 V DC, typ.  from backplane bus 5 V DC, max.  from backplane bus 24 V DC, max.  from backplane bus 24 V DC, max.  300 mA; 150 mA per DP interface  from interface 5 V DC, max.  90 mA; At each DP interface  Power loss.  Power loss, typ.  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable  expandable  No  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  integrated RAM, max.  integrated RAM, max.  expandable RAM  ex	Rated value (DC)	Power supply via system power supply
from backplane bus 5 V DC, max.  from backplane bus 24 V DC, max.  from backplane bus 24 V DC, max.  90 mA; At each DP interface  Power loss  Power loss  Power loss, typ.  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable  expandable  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  integrated RAM	Input current	
from backplane bus 24 V DC, max.  from interface 5 V DC, max.  Power loss  Power loss, typ.  Memory  Type of memory  integrated (for program)  integrated (for data)  integrated (for data)  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM	from backplane bus 5 V DC, typ.	0.9 A
from interface 5 V DC, max.  Power loss  Power loss, typ.  4.5 W  Memory  Type of memory  integrated integrated (for program) integrated (for data) expandable expandable  Load memory  expandable FEPROM expandable FEPROM, max. expandable FEPROM, max. expandable RAM, max. expandable RAM expandable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandab	from backplane bus 5 V DC, max.	1.1 A
Power loss Power loss, typ.  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  e	from backplane bus 24 V DC, max.	300 mA; 150 mA per DP interface
Power loss, typ.  Memory  Type of memory  integrated  integrated (for program)  integrated (for data)  expandable  Load memory  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  expandable RAM  expandable R	from interface 5 V DC, max.	90 mA; At each DP interface
Type of memory  Work memory  integrated integrated (for program) integrated (for data) expandable  Load memory  expandable FEPROM expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandab	Power loss	
Type of memory  Work memory  integrated  integrated (for program)  integrated (for data)  expandable  No  Load memory  expandable FEPROM  expandable FEPROM  expandable FEPROM, max.  integrated RAM, max.  integrated RAM  expandable RAM  ex	Power loss, typ.	4.5 W
Work memory  integrated integrated (for program) integrated (for data) expandable  Load memory  expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM for the simple state of the simple state o	Memory	
integrated integrated (for program) integrated (for data) expandable  Load memory  expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM expandable RAM for swith Memory Card (FLASH)  expandable RAM for swith Memory Card (RAM)  expa	Type of memory	RAM
<ul> <li>integrated (for program)</li> <li>integrated (for data)</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes; with Memory Card (FLASH) <ul> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Backup <ul> <li>present</li> <li>with battery</li> <li>with battery</li> <li>without battery</li> </ul> Battery Battery No Battery No Battery	Work memory	
<ul> <li>integrated (for data)</li> <li>expandable</li> <li>No</li> </ul> Load memory <ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Yes; with Memory Card (FLASH) <ul> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul> Backup <ul> <li>present</li> <li>with battery</li> <li>with battery</li> <li>without battery</li> </ul> Battery No Battery No Battery	<ul><li>integrated</li></ul>	5.6 Mbyte
<ul> <li>expandable</li> <li>Load memory</li> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>full Mbyte</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>full Mbyte</li> <li>full Mbyte<td><ul><li>integrated (for program)</li></ul></td><td>2.8 Mbyte</td></li></ul>	<ul><li>integrated (for program)</li></ul>	2.8 Mbyte
Load memory  • expandable FEPROM • expandable FEPROM, max. • integrated RAM, max. • expandable RAM • expandable RAM • expandable RAM, max.  • present • with battery • without battery • without battery  • Battery  Yes; with Memory Card (FLASH)  64 Mbyte  7 (RAM)  64 Mbyte  7 (RAM)  64 Mbyte  7 (RAM)  64 Mbyte	<ul><li>integrated (for data)</li></ul>	2.8 Mbyte
<ul> <li>expandable FEPROM</li> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>full Mbyte</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>full Mbyte</li> <li>full Mbyte</li></ul>	<ul><li>expandable</li></ul>	No
<ul> <li>expandable FEPROM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> <li>Yes; with Memory Card (RAM)</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul> Backup <ul> <li>present</li> <li>with battery</li> <li>with battery</li> <li>without battery</li> </ul> Battery <ul> <li>No</li> </ul> Battery <ul> <li>Battery</li> </ul>	Load memory	
<ul> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> </ul> Backup <ul> <li>present</li> <li>with battery</li> <li>without battery</li> <li>without battery</li> </ul> Battery <ul> <li>No</li> </ul> Battery <ul> <li>No</li> </ul>	<ul> <li>expandable FEPROM</li> </ul>	Yes; with Memory Card (FLASH)
<ul> <li>expandable RAM</li> <li>expandable RAM, max.</li> <li>64 Mbyte</li> <li>Backup</li> <li>present</li> <li>with battery</li> <li>without battery</li> <li>without battery</li> <li>No</li> </ul> Battery Yes; with Memory Card (RAM) 64 Mbyte Yes Yes No Battery	<ul> <li>expandable FEPROM, max.</li> </ul>	64 Mbyte
<ul> <li>expandable RAM, max.</li> <li>Backup</li> <li>present</li> <li>with battery</li> <li>without battery</li> <li>without battery</li> <li>No</li> </ul> Battery	<ul><li>integrated RAM, max.</li></ul>	1 Mbyte
Backup  • present  • with battery  • without battery  No  Battery	expandable RAM	Yes; with Memory Card (RAM)
<ul> <li>present</li> <li>with battery</li> <li>without battery</li> <li>No</li> </ul> Battery	• expandable RAM, max.	64 Mbyte
<ul> <li>with battery</li> <li>without battery</li> <li>No</li> </ul> Battery	Backup	
without battery     No  Battery	• present	Yes
Battery	<ul><li>with battery</li></ul>	Yes; all data
	without battery	No
Backup battery	Battery	
	Backup battery	

Backup current, typ.	125 μA; up to 40 °C
Backup current, max.	550 μA
Backup time, max.	See reference manual, module data, Chapter 3.3
Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	30 ns
for word operations, typ.	30 ns
for fixed point arithmetic, typ.	30 ns
for floating point arithmetic, typ.	90 ns
CPU-blocks	
DB	
<ul><li>Number, max.</li></ul>	10 000; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
<ul><li>Number, max.</li></ul>	5 000; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
<ul><li>Number, max.</li></ul>	5 000; Number range: 0 to 7999
Size, max.	64 kbyte
OB	
Number, max.	see instruction list
• Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	8; OB 10-17
<ul> <li>Number of delay alarm OBs</li> </ul>	4; OB 20-23
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	9; OB 30-38 (shortest cycle that can be set = 500 μs)
<ul> <li>Number of process alarm OBs</li> </ul>	8; OB 40-47
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55-57
<ul> <li>Number of isochronous mode OBs</li> </ul>	4; OB 61-64
<ul> <li>Number of multicomputing OBs</li> </ul>	1; OB 60
<ul> <li>Number of background OBs</li> </ul>	1; OB 90
<ul> <li>Number of startup OBs</li> </ul>	3; OB 100-102
<ul> <li>Number of asynchronous error OBs</li> </ul>	9; OB 80-88
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	24
additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— 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	2 048
Retentivity	
— adjustable	Yes
— preset	No times retentive
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes

<ul> <li>Type</li> </ul>	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	Offiliatilited (littilled offly by KAWI Capacity)
•	Total working and load moment (with backup batton)
Retentive data area (incl. timers, counters, flags), max.  Flag	Total working and load memory (with backup battery)
• Size, max.	16 kbyte; Size of bit memory address area
Retentivity available	Yes
•	MB 0 to MB 15
<ul> <li>Retentivity preset</li> <li>Number of clock memories</li> </ul>	8; in 1 memory byte
Local data	o, iii i iiieiiioiy byte
adjustable, max.	32 kbyte
• preset	16 kbyte
Address area	TO NO NO
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
<ul><li>Outputs</li></ul>	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	
<ul> <li>Number of connectable IMs (total), max.</li> </ul>	6
<ul> <li>Number of connectable IM 460s, max.</li> </ul>	6
Number of connectable IM 463s, max.	4; IM 463-2
Number of DP masters	
<ul><li>integrated</li></ul>	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
<ul> <li>Number of pluggable S5 modules (via adapter capsule in central device), max.</li> </ul>	6
Number of IO Controllers	
• integrated	0
• via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20,
- VIU OI	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
<ul> <li>PROFIBUS and Ethernet CPs</li> </ul>	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
<ul> <li>Deviation per day (buffered), max.</li> </ul>	1.7 s; Power off
<ul> <li>Deviation per day (unbuffered), max.</li> </ul>	8.6 s; For power On
Operating hours counter	
<ul><li>Number</li></ul>	16
<ul> <li>Number/Number range</li> </ul>	0 to 15
<ul> <li>Range of values</li> </ul>	SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2^31 - 1 hours
<ul> <li>Granularity</li> </ul>	1 h
retentive	Yes
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
• on MPI, device	Yes
• to DP, master	Yes
on DP, device     in AS, meeter.	Yes
• in AS, master	Yes Yes
<ul><li>in AS, device</li><li>on Ethernet via NTP</li></ul>	Yes No; Via CP
• to IF 964 DP	No.
Time difference in system when synchronizing via	INO
MPI, max.	200 ms
Interfaces	200 1110
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	MPI/PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
<ul> <li>Output current of the interface, max.</li> </ul>	150 mA
Protocols	
• MPI	Yes
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
PROFIBUS DP device	Yes
MPI	
<ul> <li>Number of connections</li> </ul>	44; 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	Yes
	Yes
<ul> <li>S7 basic communication</li> </ul>	
<ul><li>— S7 basic communication</li><li>— S7 communication</li></ul>	Yes
	Yes Yes
— S7 communication	
<ul><li>— S7 communication</li><li>— S7 communication, as client</li></ul>	Yes
<ul><li>— S7 communication</li><li>— S7 communication, as client</li><li>— S7 communication, as server</li></ul>	Yes Yes 32; If a diagnostics repeater is used on the line, the number of connection
<ul> <li>— S7 communication</li> <li>— S7 communication, as client</li> <li>— S7 communication, as server</li> <li>PROFIBUS DP master</li> <li>Number of connections, max.</li> </ul>	Yes Yes 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
— S7 communication     — S7 communication, as client     — S7 communication, as server  PROFIBUS DP master  Number of connections, max.  Transmission rate, max.	Yes Yes 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s
<ul> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>PROFIBUS DP master</li> <li>Number of connections, max.</li> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul>	Yes Yes 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
— S7 communication — S7 communication, as client — S7 communication, as server  PROFIBUS DP master  • Number of connections, max.  • Transmission rate, max.  • max. number of DP devices  Services	Yes Yes  32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1  12 Mbit/s  32
<ul> <li>S7 communication</li> <li>S7 communication, as client</li> <li>S7 communication, as server</li> <li>PROFIBUS DP master</li> <li>Number of connections, max.</li> <li>Transmission rate, max.</li> <li>max. number of DP devices</li> </ul>	Yes Yes 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s

Olahal dat	N-
— Global data communication	No Voc
— 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
<ul> <li>activation/deactivation of DP devices</li> </ul>	Yes
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
1st interface / DP master / payload data per DP Device / heade	er
<ul><li>user data per DP device, max.</li></ul>	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
1st interface / PROFIBUS DP device / header	
<ul> <li>Number of connections</li> </ul>	32
GSD file	http://support.automation.siemens.com/WW/view/en/113652
<ul> <li>Transmission rate, max.</li> </ul>	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)	No
communication)	140
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	PROFIBUS DP
Isolated	Yes
Interface types	
RS 485	Yes
Output current of the interface, max.  Protocols	150 mA
Protocols  - PROFIBUS DR master	Von
PROFIBUS DP davises	Yes
PROFIBUS DP device	Yes
PROFIBUS DP master	
Number of connections, max.	32
Transmission rate, max.	12 Mbit/s
max. number of DP devices	125
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes

— S7 communication	Yes
— S7 communication, as client	Yes
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
— Isochronous mode	Yes
— SYNC/FREEZE	Yes
<ul> <li>activation/deactivation of DP devices</li> </ul>	Yes
Direct data exchange (slave-to-slave)	Yes
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
2nd interface / DP master / payload data per DP Device / head	
<ul><li>— user data per DP device, max.</li></ul>	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
2nd interface / PROFIBUS DP device / header	
<ul> <li>Number of connections</li> </ul>	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
• Transmission rate, max.	12 Mbit/s
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
— of which consistent, max.	32 byte
Services	
— Routing	Yes; with interface active
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
·	·
Protocols	
Protocols SIMATIC communication	
	Yes
SIMATIC communication	Yes
SIMATIC communication  • S7 routing  Open IE communication	
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)	Via CP 443-1 and loadable FB
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.	
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported	Via CP 443-1 and loadable FB
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv. No
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication  • supported	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication  • supported  • Number of GD loops, max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication  • supported  • Number of GD loops, max.  • Number of GD packets, transmitter, max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication  • supported  • Number of GD loops, max.  • Number of GD packets, transmitter, max.  • Number of GD packets, receiver, max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16 32
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Data record routing  Global data communication  • supported  • Number of GD loops, max.  • Number of GD packets, transmitter, max.  • Number of GD packets, receiver, max.  • Size of GD packets, max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16 32 54 byte
SIMATIC communication  • S7 routing  Open IE communication  • ISO-on-TCP (RFC1006)  — Data length, max.  Web server  • supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  • Number of connectable OPs without message processing  • Number of connectable OPs with message processing  Older Touting  Global data communication  • supported  • Number of GD loops, max.  • Number of GD packets, transmitter, max.  • Number of GD packets, receiver, max.  • Size of GD packets, max.  • Size of GD packet (of which consistent), max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16 32 54 byte
SIMATIC communication  S7 routing  Open IE communication  ISO-on-TCP (RFC1006)  — Data length, max.  Web server  Supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  Number of connectable OPs without message processing  Number of connectable OPs with message processing  Number of connectable OPs with message processing  Data record routing  Global data communication  supported  Number of GD loops, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packet (of which consistent), max.  Size of GD packet (of which consistent), max.	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16 16 32 54 byte 1 variable
SIMATIC communication  S7 routing  Open IE communication  ISO-on-TCP (RFC1006)  — Data length, max.  Web server  supported  Isochronous mode  Equidistance  Number of DP masters with isochronous mode  User data per isochronous slave, max.  shortest clock pulse  max. cycle  communication functions / header  PG/OP communication  Number of connectable OPs without message processing  Number of connectable OPs with message processing  Number of connectable OPs with message processing  Data record routing  Global data communication  supported  Number of GD loops, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD packet (of which consistent), max.  S7 basic communication  supported	Via CP 443-1 and loadable FB 1 452 bytes via CP 443-1 Adv.  No  Yes 2 244 byte 1 ms; 0.5 ms without use of SFC 126, 127 32 ms  Yes 63 63; When using Alarm_S/SQ and Alarm_D/DQ Yes  Yes 16 16 16 32 54 byte 1 variable  Yes

C7 communication	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
<ul> <li>User data per job, max.</li> </ul>	64 kbyte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	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
<ul> <li>User data per job, max.</li> </ul>	8 kbyte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	240 byte
<ul> <li>Number of simultaneous AG-SEND/AG-RECV orders per</li> </ul>	64/64
CPU, max.	
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
Number of connections	
• overall	64
<ul> <li>usable for PG communication</li> </ul>	63
<ul> <li>reserved for PG communication</li> </ul>	1
<ul> <li>adjustable for PG communication, max.</li> </ul>	0
<ul> <li>usable for OP communication</li> </ul>	63
<ul> <li>reserved for OP communication</li> </ul>	1
— adjustable for OP communication, max.	0
usable for S7 basic communication	62
reserved for S7 basic communication	0
<ul> <li>adjustable for S7 basic communication, max.</li> </ul>	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
-	0
— adjustable for routing, max.	U .
\$7 massage functions	
S7 message functions	62: May 62 with Alarm C/SO and Alarm D/DO (ODa); may 9 with Alarm
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)
Number of login stations for message functions, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)
Number of login stations for message functions, max.  Symbol-related messages	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max. Alarm 8-blocks	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.  • preset, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.  • preset, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes 4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 500 ms grid, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes 4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 500 ms grid, max.  in 1000 ms grid, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes 4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 1000 ms grid, max.  in 1000 ms grid, max.  Number of additional values	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes 4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 1000 ms grid, max.  in 1000 ms grid, max.  with 1000 ms grid, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes 4 000  600  Yes  32  1 024  128  512  1 024
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 500 ms grid, max.  in 1000 ms grid, max.  with 100 ms grid, max.  Number of additional values  with 100 ms grid, max.  with 500, 1000 ms grid, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes  32
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 1000 ms grid, max.  in 1000 ms grid, max.  with 100 ms grid, max.  with 100 ms grid, max.  with 500, 1000 ms grid, max.  with 500, 1000 ms grid, max.	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Yes  Yes  Yes  Yes  1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes  4 000  600  Yes  32  1 024  128  512  1 024
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 1000 ms grid, max.  with 100 ms grid, max.  with 500, 1000 ms grid, max.  with 500, 1000 ms grid, max.  Test commissioning functions Status block	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024  1 10  Yes; Up to 2 simultaneously
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 1000 ms grid, max.  with 100 ms grid, max.  with 100 ms grid, max.  with 500, 1000 ms grid, max.  Status block Single step	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024  1 10  Yes; Up to 2 simultaneously Yes
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  Number of instances for alarm 8 and S7 communication blocks, max.  preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  overall, max.  in 100 ms grid, max.  in 100 ms grid, max.  in 1000 ms grid, max.  with 100 ms grid, max.  with 500, 1000 ms grid, max.  with 500, 1000 ms grid, max.  Test commissioning functions  Status block Single step  Number of breakpoints	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024  1 10  Yes; Up to 2 simultaneously
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.  • preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  • overall, max.  • in 100 ms grid, max.  • in 1000 ms grid, max.  • in 1000 ms grid, max.  • with 100 ms grid, max.  • with 500, 1000 ms grid, max.  Test commissioning functions Status block Single step  Number of breakpoints Status/control	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024 1 100  Yes; Up to 2 simultaneously Yes 4
Number of login stations for message functions, max.  Symbol-related messages  SCAN procedure  Program alarms  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.  • preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  • overall, max.  • in 100 ms grid, max.  • in 1000 ms grid, max.  • in 1000 ms grid, max.  Number of additional values  • with 100 ms grid, max.  • with 500, 1000 ms grid, max.  Test commissioning functions  Status block Single step  Number of breakpoints  Status/control  • Status/control variable	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024 1 100  Yes; Up to 2 simultaneously Yes 4
Number of login stations for message functions, max.  Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max.  Alarm 8-blocks  • Number of instances for alarm 8 and S7 communication blocks, max.  • preset, max.  Process control messages  Number of archives that can log on simultaneously (SFB 37 AR_SEND)  Number of messages  • overall, max.  • in 100 ms grid, max.  • in 1000 ms grid, max.  • in 1000 ms grid, max.  • with 100 ms grid, max.  • with 500, 1000 ms grid, max.  Test commissioning functions Status block Single step  Number of breakpoints Status/control	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC) Yes Yes Yes Yes 1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks Yes 4 000 600 Yes 32  1 024 128 512 1 024 1 100  Yes; Up to 2 simultaneously Yes 4

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
tandards, approvals, certificates	100
CE mark	Yes
	Yes
CSA approval	
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
mbient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
onfiguration / 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	SCC IIISTI UCIONI IIST
— LAD	Yes
— FBD	Yes
— STL	
	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
configuration / programming / number of simultaneously a	
— 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
— RDSYSST	8
— DP_TOPOL	1; SFC 103; per interface
configuration / programming / number of simultaneously a	·
— 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
	o, or b oo, per interface, but not more than oz across all external interfaces
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes

Width	25 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	720 g

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