## **SIEMENS**

## **Data sheet**

## 6ES7414-3EM07-0AB0



SIMATIC S7-400, CPU 414-3 PN/DP Central processing unit with: Work memory 4 MB, (2 MB code, 2 MB data), interfaces 1st interface MPI/DP 12 Mbit/s, (X1), 2nd interface Ethernet/PROFINET (X5) 3rd interface IF 964-DP plug-in (IF1)

General information	
Product type designation	CPU 414-3 PN/DP
HW functional status	01
Firmware version	V7.0
Product function	
<ul> <li>Isochronous mode</li> </ul>	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V5.5 or higher with HSP 262
CiR - Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	15 µs
Supply voltage	
Rated value (DC)	Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	1.3 A
from backplane bus 5 V DC, max.	1.6 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.	6.5 W
Power loss, max.	8 W
Memory	
Type of memory	RAM
Work memory	
<ul><li>integrated</li></ul>	4 Mbyte
<ul><li>integrated (for program)</li></ul>	2 Mbyte
<ul><li>integrated (for data)</li></ul>	2 Mbyte
expandable	No
Load memory	
<ul><li>expandable FEPROM</li></ul>	Yes; with Memory Card (FLASH)
<ul> <li>expandable FEPROM, max.</li> </ul>	64 Mbyte
<ul><li>integrated RAM, max.</li></ul>	512 kbyte
expandable RAM	Yes; with Memory Card (RAM)
expandable RAM, max.	64 Mbyte
Backup	
• present	Yes
<ul><li>with battery</li></ul>	Yes; all data
without battery	No
Battery	
Backup battery	

<ul> <li>Backup current, typ.</li> </ul>	180 μA; up to 40 °C
<ul> <li>Backup current, max.</li> </ul>	850 µA
Backup time, max.	Dealt with in the module data manual with the secondary conditions and the factors of influence
<ul> <li>Feeding of external backup voltage to CPU</li> </ul>	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	18.75 ns
for word operations, typ.	18.75 ns
for fixed point arithmetic, typ.	18.75 ns
for floating point arithmetic, typ.	37.5 ns
CPU-blocks	
DB	
<ul><li>Number, max.</li></ul>	6 000; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	3 000; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
• Number, max.	3 000; 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; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	4; OB 10-13
<ul> <li>Number of delay alarm OBs</li> </ul>	4; OB 20-23
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35 (shortest cycle that can be set = 500 μs)
<ul> <li>Number of process alarm OBs</li> </ul>	4; OB 40-43
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55-57
<ul> <li>Number of isochronous mode OBs</li> </ul>	3; OB 61-63
<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	
per priority class	24
additional within an error OB	1
Counters, timers and their retentivity	
S7 counter	0.010
• Number	2 048
Retentivity	Voc
— adjustable	Yes Z 0 to Z 7
— preset	201027
Counting range	0
— lower limit	0 999
— upper limit  IEC counter	
	Yes
• present	SFB
<ul><li>Type</li><li>Number</li></ul>	Unlimited (limited only by RAM capacity)
S7 times	Chilling (Illinited Only by rodivi capacity)
Number	2 048
Retentivity	2 070
— adjustable	Yes
•	No times retentive
— preset	140 tillies reteritive
Time range  — lower limit	10 ms
— lower limit — upper limit	9 990 s
— upper limit	0 000 0
• present	Yes
	100

• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	, and the second of the second
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	Total Working and load montery (was backery)
• Size, max.	8 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	
<ul><li>adjustable, max.</li></ul>	16 kbyte
• preset	8 kbyte
Address area	
I/O address area	
• Inputs	8 kbyte
Outputs	8 kbyte
Process image	
<ul> <li>Inputs, adjustable</li> </ul>	8 kbyte
<ul> <li>Outputs, adjustable</li> </ul>	8 kbyte
• Inputs, default	256 byte
<ul> <li>Outputs, default</li> </ul>	256 byte
<ul><li>consistent data, max.</li></ul>	244 byte
Access to consistent data in process image	Yes
Subprocess images	
Number of subprocess images, max.	15
Digital channels	222
• Inputs	65 536
— of which central	65 536
Outputs	65 536
— of which central	65 536
Analog channels	4 096
<ul><li>Inputs</li><li>— of which central</li></ul>	4 096
Outputs	4 096
— of which central	4 096
Hardware configuration	4 000
Number of expansion units, max.	21
connectable OPs	63
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	roo, ror or max. (with orch or orce)
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	1
• via CP	10; CP 443-5 Extended
● via IM 467	4
<ul> <li>Mixed mode IM + CP permitted</li> </ul>	No; IM 467 cannot be used jointly with CP 443-5 Ext. or CP 443-1 in
	PROFINET IO mode
via interface module	1; IF 964-DP
<ul> <li>Number of pluggable S5 modules (via adapter capsule in central device), max.</li> </ul>	6
Number of IO Controllers	
• integrated	1
• via CP	4; Max. 4 in the central controller; no mixed operation of different CP 443-1
- 114 51	types in PROFINET IO mode
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 slots and number of connections
PROFIBUS and Ethernet CPs	14; In total max. 10 CPs as DP master and PROFINET controller, of which up to 10 IMs or CPs as DP master and up to 4 CPs as PROFINET controller

Slots	
• required slots	2
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
<ul><li>Resolution</li></ul>	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	
Number	16
<ul> <li>Number/Number range</li> </ul>	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
on MPI, device     to DP, master	Yes
• to DP, master	Yes
<ul><li>on DP, device</li><li>in AS, master</li></ul>	Yes Yes
<ul><li>in AS, master</li><li>in AS, device</li></ul>	Yes
on Ethernet via NTP	Yes; As client
• to IF 964 DP	Yes
Time difference in system when synchronizing via	
• Ethernet, max.	10 ms
MPI, max.	200 ms
Interfaces	
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFINET (2 ports), 1 x PROFIBUS DP
	(optionally pluggable)
Number of RS 485 interfaces	1; Combined MPI / PROFIBUS DP
Number of other interfaces	1; PROFIBUS DP with IF 964-DP (plug-in option; MLFB: 6ES7964-2AA04-0AB0)
1. Interface	<i>0.150)</i>
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
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
MPI	
<ul> <li>Number of connections</li> </ul>	32; If a diagnostics repeater is used on the line, the number of connection
a Transmission	resources on the line is reduced by 1
Transmission rate, max.  Sontiaga	12 Mbit/s
Services  — PG/OP communication	Yes
— PG/OP communication  — Routing	Yes
Global data communication	Yes
— Global data communication  — S7 basic communication	Yes
— S7 communication	Yes
— S7 communication  — S7 communication, as client	Yes
— S7 communication, as server	Yes
PROFIBUS DP master	
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
• max. number of DP devices	32

DO/OD	v.
— PG/OP communication	Yes
— Routing	Yes; S7 routing
<ul> <li>Global data communication</li> </ul>	No
— S7 basic communication	Yes
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	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
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes
— DPV1	Yes
Address area	100
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
PROFIBUS DP slave	Zhojte
Number of connections	16
• 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)	No
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
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	Yes; Assignment by higher-level IO-Controller or by the user program with SFB104 "IP_CONF"
Interface types	SEBIO4 IF_CONF
• RJ 45 (Ethernet)	Yes
Number of ports	2
• integrated switch	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
PROFINET CBA	Yes
PROFIBUS DP master	No
PROFIBUS DP device	No
Open IE communication	Yes
Web server	Yes
Point-to-point connection	No
Media redundancy	Yes
PROFINET IO Controller	

Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 communication	Yes
— Isochronous mode	Yes; Only with IRT and the High Performance option
— Shared device	Yes
Prioritized startup	Yes
Number of IO devices with prioritized startup, max.	32
Number of connectable IO Devices, max.	256
— Of which IO devices with IRT, max.	64
— of which in line, max.	64
<ul> <li>Number of IO Devices with IRT and the option "high flexibility"</li> </ul>	256
— of which in line, max.	61
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	256
— of which in line, max.	256
<ul> <li>Activation/deactivation of IO Devices</li> </ul>	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>IO Devices changing during operation (partner ports), supported</li> </ul>	Yes
<ul> <li>Number of IO Devices per tool, max.</li> </ul>	8; 8 parallel calls of the SFC 12 "D_ACT_DP" possible per line. Max. 32 IO Devices changing during operation (partner ports) are supported
<ul> <li>Device replacement without swap medium</li> </ul>	Yes
— Send cycles	250 $\mu s,500~\mu s,1$ ms, 2 ms, 4 ms additionally with IRT with high performance: 250 $\mu s$ to 4 ms in 125 $\mu s$ frame
— Updating time	250 μs to 512 ms; minimum value depends on preset communication share for PROFINET IO, on the number of IO Devices and on the amount of configured user data, see PROFINET system description
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
<ul> <li>User data consistency, max.</li> </ul>	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— S7 communication	Yes
— Isochronous mode	No
— IRT	Yes
Prioritized startup	Yes
— Shared device	Yes
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	2
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
— Outputs, max.	1 440 byte; Per IO Controller with shared device
Submodules	
— Number, max.	64
— User data per submodule, max.	1 024 byte
PROFINET CBA	
acyclic transmission	Yes
cyclic transmission	Yes
Open IE communication	
<ul> <li>Number of connections, max.</li> </ul>	62
Local port numbers used at the system end	0, 20, 21, 25, 80, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Keep-alive function, supported	Yes
3. Interface	
Interface type	Pluggable interface module (IF)
Plug-in interface modules	IF 964-DP (MLFB: 6ES7964-2AA04-0AB0)
Isolated	Yes
automatic detection of transmission rate	No
Interface types  • RS 485	Yes

Output current of the interface, max.	150 mA
Protocols	
• MPI	No
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
PROFIBUS DP device	Yes
PROFIBUS DP master	
<ul> <li>Number of connections, max.</li> </ul>	16
Transmission rate, max.	12 Mbit/s
<ul> <li>max. number of DP devices</li> </ul>	96
Services	
<ul> <li>PG/OP communication</li> </ul>	Yes
— Routing	Yes; S7 routing
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	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)	
— DPV0	Yes
— DPV1	Yes
Address area	
— Inputs, max.	6 kbyte
— Outputs, max.	6 kbyte
User data per DP slave	
<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
PROFIBUS DP slave	
• number of possible connections / at the 3rd interface / as	16
DP slave	
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
<ul> <li>transfer rate / at the 3rd interface / as DP slave / maximum</li> </ul>	12 Mbit/s
maximam	
automatic haud rate search	No
automatic baud rate search     Address area max	No 32: Virtual slots
Address area, max.	32; Virtual slots
<ul> <li>Address area, max.</li> <li>data volume / at the 3rd interface / as DP slave / as user data per address range / maximum</li> <li>data volume / at the 3rd interface / as DP slave / as consistent reference data per address range /</li> </ul>	32; Virtual slots
<ul> <li>Address area, max.</li> <li>data volume / at the 3rd interface / as DP slave / as user data per address range / maximum</li> <li>data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum</li> </ul>	32; Virtual slots 32 byte
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services	32; Virtual slots 32 byte 32 byte
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication	32; Virtual slots 32 byte  32 byte  Yes
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication  S7 basic communication	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication  S7 basic communication  S7 communication	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No No Yes
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  — data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  — PG/OP communication  — Routing  — Global data communication  — S7 basic communication  — S7 communication  — S7 communication  — S7 communication, as client	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No No Yes Yes
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  — data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  — PG/OP communication  — Routing  — Global data communication  — S7 basic communication  — S7 communication  — S7 communication, as client  — S7 communication, as server	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No No Yes Yes Yes
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication  S7 basic communication  S7 communication  S7 communication  S7 communication, as client  S7 communication, as server  Direct data exchange (slave-to-slave communication)	32; Virtual slots 32 byte  Yes Yes; with interface active No No Yes Yes Yes Yes Yes No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  — data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  — PG/OP communication  — Routing  — Global data communication  — S7 basic communication  — S7 communication  — S7 communication  — S7 communication, as client  — S7 communication, as server  — Direct data exchange (slave-to-slave communication)  — DPV1	32; Virtual slots 32 byte  32 byte  Yes Yes; with interface active No No Yes Yes Yes
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication  S7 basic communication  S7 communication  S7 communication  S7 communication  S7 communication, as client  Direct data exchange (slave-to-slave communication)  DPV1  Transfer memory	32; Virtual slots 32 byte  Yes Yes; with interface active No No Yes Yes Yes Yes Yes No No No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  — data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  — PG/OP communication  — Routing  — Global data communication  — S7 basic communication  — S7 communication  — S7 communication  — S7 communication, as client  — S7 communication, as server  — Direct data exchange (slave-to-slave communication)  — DPV1  Transfer memory  — Inputs	32; Virtual slots 32 byte  Yes Yes; with interface active No No Yes Yes Yes Yes Yes Yes Yes Yes Yes No No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  — data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  — PG/OP communication  — Routing  — Global data communication  — S7 basic communication  — S7 communication  — S7 communication  — S7 communication, as client  — S7 communication, as server  — Direct data exchange (slave-to-slave communication)  — DPV1  Transfer memory  — Inputs  — Outputs	32; Virtual slots 32 byte  Yes Yes; with interface active No No Yes Yes Yes Yes Yes No No No
Address area, max.  data volume / at the 3rd interface / as DP slave / as user data per address range / maximum  data volume / at the 3rd interface / as DP slave / as consistent reference data per address range / maximum  Services  PG/OP communication  Routing  Global data communication  S7 basic communication  S7 communication  S7 communication  S7 communication, as client  Direct data exchange (slave-to-slave communication)  DPV1  Transfer memory  Inputs	32; Virtual slots 32 byte  Yes Yes; with interface active No No Yes Yes Yes Yes Yes Yes Yes Yes Yes No No

Media redundancy	
Media redundancy  — Switchover time on line break, typ.	200 ms
Switchover time on line break, typ.      Number of stations in the ring, max.	200 ms 50
SIMATIC communication	50
• S7 routing	Yes
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	62
— Data length, max.	32 kbyte
several passive connections per port, supported	Yes
• ISO-on-TCP (RFC1006)	Yes; Via integrated PROFINET interface or CP 443-1 Adv. and loadable FBs
— Number of connections, max.	62
— Data length, max.	32 kbyte; 1 452 bytes via CP 443-1 Adv.
• UDP	Yes; via integrated PROFINET interface and loadable FBs
<ul> <li>Number of connections, max.</li> </ul>	62
— Data length, max.	1 472 byte
Web server	
• supported	Yes
<ul> <li>User-defined websites</li> </ul>	Yes
Number of HTTP clients	5
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 / header	
PG/OP communication	Yes
Number of connectable OPs without message processing	63
Number of connectable OPs with message processing	63; When using Alarm_S/SQ and Alarm_D/DQ
Data record routing	Yes
Global data communication	V
supported     Number of CD leave may	Yes
Number of GD loops, max.  Number of GD register transmitter may	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	16
<ul><li>Size of GD packets, max.</li><li>Size of GD packet (of which consistent), max.</li></ul>	54 byte 1 variable
S7 basic communication	i variable
• 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	24/24
CPU, max.	
Standard communication (FMS)	V V OD 11 111 FF
supported     Supported     Supported	Yes; Via CP and loadable FB
communication functions / PROFINET CBA (with set target commu	·
Setpoint for the CPU communication load     Number of regards intercommedian posterior	20 %
Number of remote interconnection partners     number of meeter/device functions	32
number of master/device functions     total of all master/device connections	150
total of all master/device connections	4 500

and alsa length of all outgoing master/device connections, max.  Number of device-internal and PROFIBUS interconnections, max.  Data length of discovering interconnections.  The sampling interval, min.  Data length of all incoming interconnections.  Number of outgoing interconnections.  Number of outgoing interconnections.  Number of outgoing interconnections.  Number of outgoing interconnections.  Data length of all outgoing interconnections, max.  Different outgoing interconnections, max.  Different outgoing interconnections, max.  Different outgoing interconnections and data length sead of a PROFINET CBA / term do interconnections / with profire outgoing interconnections and data length sead outgoing interconnections.  Transmission frequency. Transmission interval, min.  Number of outgoing interconnections and data length sead outgoing on preset communication load, number of interconnections and data length sead outgoing on preset communication load, number of interconnections and data length sead outgoing on preset communication load, number of interconnections and data length sead length of all outgoing interconnections and data length sead length sead length of all outgoing interconnections and data length sead length of all outgoing interconnections and data length sead length of all outgoing interconnections and data length sead length of all outgoing interconnections and data length sead length outgoing interconnections and data length sead length of all number of sead as PROFINET CBA / PROFIRED sead length of all length outgoing interconnections and data length sead length sead length sead length outgoing length outgoing length outgoing	data length of all incoming master/device connections,	45 000 byte
Number of device-internal and PROFIBUS inferconnections, max.  Data length of device-internal and PROFIBUS inferconnections, max.  Data length per connection. max.  Simple per connection. max.  Data length of all incurring interconnections.  Number of full incoming interconnections.  Number of outpoing interconnections.  Data length of all incurring interconnections. max.  Data length of all outpoing interconnections. max.  Number of linear or device interconnections. max.  Number of linear or device interconnections. max.  Data length of all outpoing interconnections. max.  Data length of all incurring interconnections. max.  Data length of all incurring interconnections. max.  Data length of all incurring interconnections. max.  Data length of all outpoing interconnections. max.  Data length of all incurring interconnections.  Data length of all incurring interconnections.  Data length of all incurring interconnections.  Data length of all incurring incur	<ul><li>max.</li><li>data length of all outgoing master/device connections,</li></ul>	45 000 byte
Data length of device-internal und PROFIBUS interconnection, max.  Data length per connection, max.  Number of incoming interconnections  Number of incoming interconnections  Number of incoming interconnections  Number of outgoing interconnections  Data length of all outgoing interconnections, max.  Number of incoming inferconnections outgoing interconnections outgoing intercone		1 000
interconnections, max.  - Data length of all incorring interconnections, max.  - Data length of all incorring interconnections, max.  - Data length of all incorring interconnections, max.  - Data length of all outgoing interconnections, max.  - Number of incorning interconnections, max.  - Number of outgoing interconnections, max.  - Number of outgoing interconnections, max.  - Data length of all outgoing interconnections, max.  - Number of contactions  - Number of stations that can log on for HMI variables of PROFINET CBA / HMI variables of PROFIN		16 000 byte
performance data / FROFINET CBA / remote interconnection / with acyclic transfer / header  - Sampling interval, min Sumpling interval, min Number of incoming interconnections - Number of outgoing interconnections - Number of outgoing interconnections, max Data length of all unging interconnections, max data volume / as user data for remote interconnections of the state of the stat	interconnections, max.	,
- Sampling interval, min. and data length used a data length used a data length used a data length used a length of all incoming interconnections and data length used a solution in the control of the c		·
- Number of incoming interconnections 250 - Number of outgoing interconnections 250 - Number of outgoing interconnections 250 - Data length of all outgoing interconnectors, max. 250 - Data length of all outgoing interconnectors, max. 3000 byte 30	·	·
- Number of outgoing interconnections 250 - Data length of all incoming interconnections, max data volume / as user data for remote interconnections / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / remote interconnection / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header - Transmission frequency: Transmission interval, min Number of incoming interconnections 300 - Number of louging interconnections 300 - Number of outgoing interconnections 300 - Data length of all incoming interconnections, max. 4800 byte 5800 byte 6800 byte 68		and data length used
- Data length of all incoming interconnections, max Data length of all outgoing interconnections, max data volumer as user data for remote interconnections? In the case of acyclic transmission / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / remote interconnections / maximum performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header   - Transmission frequency: Transmission interval, min Number of incoming interconnections   300   - Number of outgoing interconnections   300   - Number of outgoing interconnections   4800 byte   - data length of all incoming interconnections, max data length of all incoming interconnections, max data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / IMM variables via PROFINET / acyclic / header   - Number of stations that can log on for HMI variables   2x PN OPC/Tx IMap   - HMI variable updating   500 ms   - HMI variable updating   500 ms   - HMI variable updating   500 ms   - Leat length of all IMM variables, max.   32 000 byte   - Supported   - Sup	Ü	
- Data length of all outgoing interconnections, max data volume / a sue of data for remote interconnections / with PRGFINET CBA / per connection / maximum performance data / PROFINET CBA / remote interconnections / with respect of outgoing interconnections and data length used  - Transmission frequency. Transmission interval, min Number of loughing interconnections and data length used  - Number of outgoing interconnections, max Data length of all incoming interconnections, max Data length of all outgoing interconnections, max data volume / as user data for remote with respect outgoing interconnections, max data volume / as user data for remote with respect outgoing interconnections, max data volume / as user data for remote with respect outgoing interconnections, max data volume / as user data for remote with respect outgoing interconnections, max data volume / as user data for remote with respect wi	5 5	250
- data volume / as user data for remote interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum / performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header   - Transmission frequency. Transmission interval, min.   - Number of incoming interconnections   - Number of outgoing interconnections   - Number of outgoing interconnections   - Number of outgoing interconnections, max.   - Data length of all outgoing interconnections / maximum performance data / PROFINET CBA / Intervalbes via PROFINET / acyclic / header   - Number of stations that can log on for HMI variables   - Number of stations that can log on for HMI variables   - Number of HMI variables   - Number of HMI variables   - Data length of all HMI variables, max.   - Subject of all HMI variables, max.   - Subject of all HMI variables   - Overall   - Subject of Communication   - Subject of CP communication	<ul> <li>Data length of all incoming interconnections, max.</li> </ul>	8 000 byte
interconnections / in the case of acyclic transmission / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header   — Transmission frequency: Transmission interval, min.   — Number of incoming interconnections   — Number of outgoing interconnections   — Number of outgoing interconnections, max.   — Data length of all incoming interconnections, max.   — Data length of all incoming interconnections, max.   — Data length of all incoming interconnections, max.   — data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per Min variables (PN OPC/Map)   — Hill variable updating   — Number of Hill variables   — Data length of all Hill variables, max.   — supported   — subside for PG communication   — adjustable for PG routing   — adjustable for PG routing   — adjustable for ST communication   — adjustable for ST communication   — adjustable for ST communication   — adjustable for routing   — adjustable for routing   — adjustable for routing   — adjustable for sT communication   — adjustable for routing   — adjustable for rou	<ul> <li>Data length of all outgoing interconnections, max.</li> </ul>	8 000 byte
performance data / PROFINET CBA / remote interconnection / with cyclic transfer / header  — Transmission frequency. Transmission interval, min. — Number of incoming interconnections — Number of incoming interconnections — Number of outgoing interconnections — Number of outgoing interconnections, max. — Data length of all incoming interconnections, max. — Data length of all outgoing interconnections, max. — data volume / a suse of data for remote interconnections / with cyclical transfer / with PROFINET CBA / per data for remote interconnections / with cyclical transfer / with PROFINET CBA / per material with PROFINET CB	interconnections / in the case of acyclic transmission /	2 000 byte
- Transmission frequency: Transmission interval, min.  - Number of incoming interconnections - Number of outgoing interconnections - Number of outgoing interconnections, max Data length of all coutgoing interconnections, max Data length of all coutgoing interconnections, max data volume / as user data for remote interconnections / max with cyclical transfer? with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per connection / maximum performance data / PROFINET CBA / PROFIBUS proxy functionality / header - Number of stations that can log on for HMI variables in 1000 - Data length of PROFINET CBA / PROFIBUS proxy functionality / header - supported - Support	·	/ with cyclic transfer / header
- Number of incoming interconnections 300  - Number of outgoing interconnections, max. 4800 byte  - Data length of all cusping interconnections, max. 4800 byte  - data volume / as user data for remote interconnections / max. 4800 byte  - data volume / as user data for remote interconnections / maximum / secondary / s	•	1 ms; Depending on preset communication load, number of interconnections
- Number of outgoing interconnections 300 - Data length of all incoming interconnections, max. 4800 byte - Data length of all incoming interconnections, max. 4800 byte - data volumer / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / HMI variables via PROFINET / acyclic / header - Number of stations that can log on for HMI variables (PN OPC/Map) - HMI variable updating 500 ms - Number of HMI variables, max. 32 000 byte - Data length of all HMI variables, max. 32 000 byte - Data length of all HMI variables, max. 32 000 byte - Data length of all HMI variables, max. 32 000 byte - Data length of all HMI variables, max. 32 000 byte - Data length per connection, max. 40 byte; Slave-dependent  Number of connections - overall 64 - usable for PG communication 63 - reserved for PG communication 10 - adjustable for PG communication 63 - reserved for OP communication 63 - reserved for OP communication 62 - reserved for OP communication 62 - reserved for S7 basic communication 62 - reserved for S7 basic communication 62 - reserved for S7 basic communication 62 - reserved for S7 communication 63 - reserved for S7 communication 62 - reserved for S7 communication 62 - reserved for S7 communication 63 - reserved for S7 basic communication 62 - reserved for S7 basic communication 62 - reserved for S7 communication 62 - reserved for S7 communication 63 - reserved for S7 communication 64 - adjustable for S7 communication 65 - reserved for S7 communication 65 - reserved for S7 communication 65 - reserved for S7 basic communication 65 - reserved for S7 basic communication 65 - reserved for S7 communication 65 - reserved for S7 basic communication 65 - res	— Number of incoming interconnections	<u> </u>
- Data length of all incoming interconnections, max Data length of all outgoing interconnections, max data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per connection / maximum performance data / PROFINET CBA / HMI variables via PROFINET / acyclic / header - Number of stations that can log on for HMI variables (PN OPC/IXap) - HMI variable updating	č	
- Data length of all outgoing interconnections, max data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum  performance data / PROFINET CBA / HMI variables via PROFINET / acyclic / header  - Number of stations that can log on for HMI variables (PN OPC/Map)  - HMI variable updating - Number of HMI variables, max Data length of all HMI variables, max Data length of all HMI variables, max Supported - Supported - Supported - Data length per connection, max.  Number of connections  • overal • usable for PG communication - reserved for PG communication - adjustable for PG communication - adjustable for OP communication - adjustable for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 commu		
- data volume / as user data for remote interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / HMI variables valence / PROFINET CBA / HMI variables valence / PROFINET / acyclic / header / acyclic / acycli	-	
interconnections / with cyclical transfer / with PROFINET CBA / per connection / maximum performance data / PROFINET CBA / per connection / maximum performance data / PROFINET CBA / HMI variables (PN OPC/Map)  — Number of stations that can log on for HMI variables (PN OPC/Map)  — HMI variable updating 500 ms 1000 3 ms 1000 1000 1000 1000 1000 1000 1000 1		•
- Number of stations that can log on for HMI variables (PN OPC/IMap) - HMI variable updating - Number of HMI variables, max Data length of all HMI variables, max.  performance data / PROFINET CBA / PROFIBUS proxy functionality / header - supported - Data length per connection, max.  Vumber of connections  • overall • usable for PG communication - adjustable for PG communication - adjustable for OP communication - adjustable for PG communication - adjustable for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 communication - Adjustable for S	interconnections / with cyclical transfer / with	450 byte
- Number of stations that can log on for HMI variables (PN OPC/IMap) - HMI variable updating - Number of HMI variables - Data length of all HMI variables, max.  20 000 byte  performance data / PROFINET CBA / PROFIBUS proxy functionality / header - supported - Data length per connection, max.  Versi, 32 PROFIBUS slaves max. connectable - Data length per connection, max.  • overall  • usable for PG communication - reserved for PG communication - adjustable for PG communication - adjustable for PG communication - reserved for OP communication - adjustable for S7 basic communication - adjustable for S7 basic communication - adjustable for S7 commun	performance data / PROFINET CBA / HMI variables via PROF	INET / acyclic / header
- Number of HMI variables - Data length of all HMI variables, max. 32 000 byte  performance data / PROFINET CBA / PROFIBUS proxy functionality / header - supported - Supported - Ves; 32 PROFIBUS slaves max. connectable - Data length per connection, max. 240 byte; Slave-dependent  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 1 - adjustable for OP communication 1 - adjustable for OP communication 63 - reserved for OP communication 62 - reserved for S7 basic communication 62 - reserved for S7 basic communication 0 - adjustable for S7 communication 62 - reserved for S7 communication 0 0 - adjustable f	Number of stations that can log on for HMI variables	
- Number of HMI variables - Data length of all HMI variables, max. 32 000 byte  performance data / PROFINET CBA / PROFIBUS proxy functionality / header - supported - Supported - Ves; 32 PROFIBUS slaves max. connectable - Data length per connection, max. 240 byte; Slave-dependent  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 1 - adjustable for OP communication 1 - adjustable for OP communication 63 - reserved for OP communication 62 - reserved for S7 basic communication 62 - reserved for S7 basic communication 0 - adjustable for S7 communication 62 - reserved for S7 communication 0 0 - adjustable f		500 ms
performance data / PROFINET CBA / PROFIBUS proxy functionality / header  - supported - Data length per connection, max.  Number of connections  • overall • usable for PG communication - adjustable for PG communication - reserved for OP communication - adjustable for OP communication - adjustable for OP communication - reserved for S7 basic communication - adjustable for S7 communication, max.  • usable for routing - adjustable for routing - adjustable for routing - adjustable for routing, max.  53; Max. 63 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm, Alarm_8, Alarm_8, Notify and Notify_8 (e.g. WinCC)  Symbol-related messages - Yes - SCAN procedure - Yes - Program alarms - verserved for ST connections of the state of the		1 000
performance data / PROFINET CBA / PROFIBUS proxy functionality / header  - supported - Data length per connection, max.  Number of connections  • overall • usable for PG communication - adjustable for PG communication - reserved for OP communication - adjustable for OP communication - adjustable for OP communication - reserved for S7 basic communication - adjustable for S7 communication, max.  • usable for routing - adjustable for routing - adjustable for routing - adjustable for routing, max.  53; Max. 63 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm, Alarm_8, Alarm_8, Notify and Notify_8 (e.g. WinCC)  Symbol-related messages - Yes - SCAN procedure - Yes - Program alarms - verserved for ST connections of the state of the	Data length of all HMI variables, max.	32 000 byte
- supported - Data length per connection, max.  Number of connections  • overall 64  • usable for PG communication 63  - reserved for PG communication, max.  • usable for OP communication 63  - reserved for OP communication 63  - reserved for OP communication 1  - adjustable for OP communication 53  - reserved for OP communication 63  - reserved for OP communication 50  - adjustable for OP communication 62  - reserved for S7 basic communication 50  - adjustable for S7 basic communication 50  - adjustable for S7 communication 50  - adjustable for S7 communication 50  - usable for S7 communication 50  - adjustable for routing 51  - reserved for routing 51  - reserved for routing 51  - adjustable for routing 52  - adjustable for routing 53  - adjustable for routing 54  - adjustable for routing 55  - adjustable fo		•
Data length per connection, max.  Number of connections  overall  usable for PG communication  - reserved for PG communication  usable for OP communication  - adjustable for PG communication  - adjustable for OP communication  - adjustable for S7 basic communication  - adjustable for S7 basic communication  - adjustable for S7 basic communication  - adjustable for S7 communication  - adjustable for FO communication, max.  0  ■ usable for routing  - reserved for FO communication, max.  ■ usable for routing  - adjustable for routing  - adjustable for routing  - 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_8, Notify and Notify 8 (e.g. WinCC)  Symbol-related messages  Yes  SCAN procedure  Yes  Program alarms		
Number of connections       64         • overall       64         • usable for PG communication       63         — reserved 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, max.       0         • usable for S7 basic communication, max.       0         • usable for S7 communication       62         — reserved for S7 communication       62         — reserved for S7 communication, max.       0         • usable for s7 communication, max.       0         • usable for routing       31         — reserved for s7 communication, max.       0         • usable for routing       31         — reserved for routing       0         • usable for routing       0         — adjustable for routing, max.       0         S7 message functions       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 </td <td></td> <td>240 byte; Slave-dependent</td>		240 byte; Slave-dependent
<ul> <li>usable for PG communication</li> <li>— reserved for PG communication, max.</li> <li>usable for OP communication</li> <li>— usable for OP communication</li> <li>— reserved for OP communication</li> <li>— adjustable for OP communication</li> <li>— adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>— usable for S7 basic communication</li> <li>— reserved for S7 basic communication</li> <li>— adjustable for S7 basic communication</li> <li>— adjustable for S7 communication</li> <li>— usable for S7 communication</li> <li>— reserved for S7 communication</li> <li>— adjustable for S7 communication</li> <li>— adjustable for S7 communication</li> <li>— adjustable for routing</li> <li>— reserved for routing</li> <li>— reserved for routing</li> <li>— adjustable for routing, max.</li> <li>0</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>Yes</li> <li>SCAN procedure</li> <li>Program alarms</li> </ul>	Number of connections	
- 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 0 - adjustable for S7 basic communication, max. 0 • usable for S7 communication 62 - reserved for S7 communication 62 - reserved for S7 communication 0 - adjustable for S7 communication 0 - adjustable for S7 communication, max. 0 • usable for routing 31 - reserved for routing 0 - adjustable 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	overall	64
<ul> <li>adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>adjustable for S7 basic communication</li> <li>adjustable for S7 basic communication, max.</li> <li>usable for S7 communication</li> <li>adjustable for S7 communication</li> <li>- reserved for S7 communication</li> <li>adjustable for S7 communication, max.</li> <li>usable for routing</li> <li>reserved for routing</li> <li>adjustable for routing</li> <li>adjustable for routing, max.</li> <li>0</li> <li>reserved for routing, max.</li> <li>0</li> <li>Adjustable for routing, max.</li> <li>0</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>Yes</li> <li>Program alarms</li> <li>Yes</li> </ul>	usable for PG communication	63
<ul> <li>adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>adjustable for S7 basic communication</li> <li>adjustable for S7 basic communication, max.</li> <li>usable for S7 communication</li> <li>adjustable for S7 communication</li> <li>- reserved for S7 communication</li> <li>adjustable for S7 communication, max.</li> <li>usable for routing</li> <li>reserved for routing</li> <li>adjustable for routing</li> <li>adjustable for routing, max.</li> <li>0</li> <li>reserved for routing, max.</li> <li>0</li> <li>Adjustable for routing, max.</li> <li>0</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>Yes</li> <li>Program alarms</li> <li>Yes</li> </ul>		1
<ul> <li>usable for OP communication  — reserved for OP communication  — adjustable for OP communication, max.  <ul> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>adjustable for S7 basic communication</li> <li>adjustable for S7 basic communication, max.</li> <li>usable for S7 communication</li> <li>reserved for S7 communication</li> <li>adjustable for S7 communication</li> <li>adjustable for S7 communication, max.</li> </ul> </li> <li>usable for routing  — reserved for routing  — adjustable for routing  — adjustable for routing, max.</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>Yes</li> <li>SCAN procedure</li> <li>Yes</li> </ul>		0
- 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 0 - adjustable for S7 communication 62 - reserved for S7 communication 62 - reserved for S7 communication 0 - adjustable 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_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)  Symbol-related messages Yes  SCAN procedure Yes  Program alarms Yes	•	63
<ul> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>adjustable for S7 basic communication, max.</li> <li>usable for S7 communication</li> <li>usable for S7 communication</li> <li>reserved for S7 communication</li> <li>adjustable for S7 communication, max.</li> <li>usable for routing</li> <li>reserved for S7 communication, max.</li> <li>usable for routing</li> <li>adjustable for routing</li> <li>reserved for routing</li> <li>adjustable for routing, max.</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>Yes</li> <li>SCAN procedure</li> <li>Yes</li> <li>Program alarms</li> </ul>		
usable for S7 basic communication     — reserved for S7 basic communication     — adjustable for S7 basic communication, max.      usable for S7 communication     — reserved for S7 communication     — adjustable for S7 communication     — adjustable for S7 communication, max.      usable for routing     — reserved for routing     — reserved for routing     — adjustable for routing     — adjustable for routing     — reserved for routing     — adjustable for routing     — adjustable for routing     — when the served for routing     — adjustable for routing     — adjustable for routing     — adjustable for routing     — adjustable for routing     — reserved for routing     — adjustable for routing     — reserved for routing     — adjustable for routing     — reserved for routing     — reserv		
- reserved for S7 basic communication - adjustable for S7 basic communication, max.  • usable for S7 communication - adjustable for S7 communication - adjustable for S7 communication - adjustable for S7 communication, max.  • usable for routing - reserved for routing - adjustable for routing - adjustable for routing, max.   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  SCAN procedure  Program alarms  Yes		
<ul> <li>adjustable for S7 basic communication, max.</li> <li>usable for S7 communication</li> <li>reserved for S7 communication</li> <li>adjustable for S7 communication, max.</li> <li>usable for routing</li> <li>reserved for routing</li> <li>adjustable for routing</li> <li>adjustable for routing</li> <li>adjustable for routing, max.</li> </ul> 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		
<ul> <li>usable for S7 communication</li> <li>reserved for S7 communication</li> <li>adjustable for S7 communication, max.</li> <li>usable for routing</li> <li>reserved for routing</li> <li>adjustable for routing</li> <li>adjustable for routing, max.</li> </ul> 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 Yes		
<ul> <li>— reserved for S7 communication</li> <li>— adjustable for S7 communication, max.</li> <li>● usable for routing</li> <li>— reserved for routing</li> <li>— adjustable for routing, max.</li> <li>O</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>SCAN procedure</li> <li>Program alarms</li> <li>Yes</li> </ul>		
<ul> <li>— adjustable for S7 communication, max.</li> <li>● usable for routing</li> <li>— reserved for routing</li> <li>— adjustable for routing, max.</li> <li>O</li> <li>S7 message functions</li> <li>Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>SCAN procedure</li> <li>Program alarms</li> <li>Yes</li> </ul>		
<ul> <li>usable for routing         — reserved for routing         — adjustable for routing, max.</li> <li>S7 message functions  Number of login stations for message functions, max.</li> <li>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)</li> <li>Symbol-related messages</li> <li>SCAN procedure</li> <li>Program alarms</li> </ul> Yes		
— 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		
— adjustable for routing, max.  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  Program alarms  Yes	<u> </u>	
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  Program alarms  Yes	<u> </u>	
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)  Yes  SCAN procedure  Program alarms  Yes		•
Symbol-related messages     Yes       SCAN procedure     Yes       Program alarms     Yes		
SCAN procedure Yes Program alarms Yes	Symbol-related massages	
Program alarms Yes	·	
	<u> </u>	
Process diagnostic mossages		
Process diagnostic messages  Yes  400: Simultaneously active glarm S/SO blocks or glarm D/DO blocks		
simultaneously active Alarm-S blocks, max.  400; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks  Yes	·	

Number of instances for alarm 8 and S7 communication	1 200
blocks, max.	300
preset, max.  Presess control massages	Yes
Process control messages  Number of archives that can log on simultaneously (SFB 37	16
AR_SEND)	10
Number of messages	
• overall, max.	512
• in 100 ms grid, max.	128
• in 500 ms grid, max.	256
● in 1000 ms grid, max.	512
Number of additional values	
<ul><li>with 100 ms grid, max.</li></ul>	1
• with 500, 1000 ms grid, max.	10
Test commissioning functions	
Status block	Yes; Up to 16 simultaneously
Single step	Yes
Number of breakpoints	16
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, distributed I/Os
Number of variables, max.	256
Diagnostic buffer	Ver
• present	Yes
Number of entries, max.	3 200
— adjustable	Yes
— preset	120
Service data  • can be read out	Yes
Standards, approvals, certificates	165
	Voc
CE mark	Yes
CE mark CSA approval	Yes
CE mark CSA approval UL approval	Yes Yes
CE mark CSA approval UL approval cULus	Yes Yes Yes
CE mark CSA approval UL approval cULus FM approval	Yes Yes Yes Yes
CE mark CSA approval UL approval cULus FM approval RCM (formerly C-TICK)	Yes Yes Yes
CE mark CSA approval UL approval cULus FM approval RCM (formerly C-TICK) KC approval	Yes Yes Yes Yes Yes
CE mark CSA approval UL approval cULus FM approval RCM (formerly C-TICK)	Yes Yes Yes Yes Yes Yes Yes
CE mark CSA approval UL approval cULus FM approval RCM (formerly C-TICK) KC approval EAC (formerly Gost-R)	Yes Yes Yes Yes Yes Yes Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas	Yes Yes Yes Yes Yes Yes Yes Yes Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX	Yes Yes Yes Yes Yes Yes Yes Yes Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions	Yes Yes Yes Yes Yes Yes Yes Yes Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software  • STEP 7	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C
CE mark  CSA approval  UL approval  CULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software  • STEP 7  configuration / programming / header	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C  Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration / programming / header  • Command set	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C  Yes see instruction list
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software  • STEP 7  configuration / programming / header  • Command set  • Nesting levels	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C  Yes  see instruction list 7
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software  • STEP 7  configuration / programming / header  • Command set  • Nesting levels  • Access to consistent data in process image	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc   0 °C 60 °C  Yes  see instruction list 7 Yes
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration / programming / header  • Command set  • Nesting levels  • Access to consistent data in process image  • System functions (SFC)	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C  Yes see instruction list 7 Yes see instruction list
CE mark  CSA approval  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration software  • STEP 7  configuration / programming / header  • Command set  • Nesting levels  • Access to consistent data in process image  • System functions (SFC)  • System function blocks (SFB)	Yes Yes Yes Yes Yes Yes Yes Yes ATEX II 3G Ex nA IIC T4 Gc  0 °C 60 °C  Yes see instruction list 7 Yes see instruction list
CE mark  CSA approval  UL approval  CULus  FM approval  RCM (formerly C-TICK)  KC approval  EAC (formerly Gost-R)  Use in hazardous areas  • ATEX  Ambient conditions  Ambient temperature during operation  • min.  • max.  configuration / header  Configuration / programming / header  • Command set  • Nesting levels  • Access to consistent data in process image  • System function blocks (SFB)  Programming language	Yes Yes Yes Yes Yes Yes Yes Yes Yes  ATEX II 3G Ex nA IIC T4 Gc   O °C 60 °C  Yes  see instruction list 7 Yes see instruction list see instruction list

— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
configuration / programming / number of simultaneously active	SFC / header
— 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; SFC 51
— DP_TOPOL	1; SFC 103; per interface
configuration / programming / number of simultaneously active	SFB / header
— 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	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	50 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	900 g