SIEMENS

Data sheet

6ES7412-1XJ05-0AB0



********* Replacement part ******** SIMATIC S7-400, CPU 412-1 Central processing unit with: work memory 288 KB, (144 KB code, 144 KB of data), Interface MPI/DP 12 Mbit/s,

General information	
Product type designation	CPU 412-1
HW functional status	03
Firmware version	V5.3
Product function	
 Isochronous mode 	Yes; For PROFIBUS only
Engineering with	
 Programming package 	STEP 7 V5.3 SP2 or higher with HW update
CiR - Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	30 µs
Supply voltage	
Rated value (DC)	Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	0.5 A
from backplane bus 5 V DC, max.	0.6 A
from backplane bus 24 V DC, max.	150 mA; 150 mA per DP interface
from interface 5 V DC, max.	90 mA
Power loss	
Power loss, typ.	2.5 W
Power loss, max.	3 W
Memory	
Type of memory	RAM
Work memory	
 integrated 	288 kbyte
 integrated (for program) 	144 kbyte
 integrated (for data) 	144 kbyte
expandable	No
Load memory	
 expandable FEPROM 	Yes; with Memory Card (FLASH)
 expandable FEPROM, max. 	64 Mbyte
 integrated RAM, max. 	512 kbyte
expandable RAM	Yes; with Memory Card (RAM)
• expandable RAM, max.	64 Mbyte
Backup	
• present	Yes
• with battery	Yes; all data
without battery	No
Battery	

Backup battery	
Backup sattery Backup current, typ.	125 μA; up to 40 °C
Backup current, max.	300 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	5 7 86 10 15 7 86
	75 ns
for bit operations, typ. for word operations, typ.	75 ns
	75 ns
for fixed point arithmetic, typ for floating point arithmetic, typ.	225 ns
CPU-blocks	225115
DB	
Number, max.	1 500: Number range: 1 to 16000
-	1 500; Number range: 1 to 16000
• Size, max. FB	64 kbyte
Number, max.	750; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	750; Number range: 0 to 7999
• Size, max.	64 kbyte
OB OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	2; OB 10, 11
Number of delay alarm OBs	2; OB 20, 21
Number of cyclic interrupt OBs	2; OB 32, 35 (shortest cycle that can be set = 500 μ s)
Number of process alarm OBs	2; OB 40, 41
Number of DPV1 alarm OBs	3; OB 55-57
Number of isochronous mode OBs	2; OB 61-62
Number of multicomputing OBs	1; OB 60
Number of background OBs	1; OB 90
Number of startup OBs	3; OB 100-102
Number of asynchronous error OBs	9; OB 80-88
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	2,00121,122
per priority class	24
additional within an error OB	1
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
•Туре	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	No times retentive

Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
•Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	Total working and load memory (with backup battery)
• Size, max.	4 kbyte; Size of bit memory address area
Retentivity available	Yes
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; in 1 memory byte
Local data	
• adjustable, max.	8 kbyte
• preset	4 kbyte
Address area	+ hoyto
I/O address area	
	4 khyta
Inputs Outputs	4 kbyte
Outputs Process image	4 kbyte
Inputs, adjustable	4 kbyte
Outputs, adjustable	4 kbyte
Inputs, default	128 byte
Outputs, default	128 byte
consistent data, max.	244 byte
	Yes
Access to consistent data in process image	165
 Subprocess images Number of subprocess images, max. 	15
Digital channels	10
Inputs	32 768
— of which central	32 768
Outputs	32 768
— of which central	32 768
Analog channels	
Inputs	2 048
— of which central	2 048
Outputs	2 048
— of which central	2 048
Hardware configuration	2010
Integrated power supply	No
Number of expansion units, max.	21
connectable OPs	31
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	
Number of connectable IMs (total), max.	6
Number of connectable IM 460s, max.	6
Number of connectable IM 463s, max.	4; IM 463-2
Number of DP masters	
• integrated	1
• via CP	10; CP 443-5 Extended
• via IM 467	4
Mixed mode IM + CP permitted	No; IM 467 not suitable for use with CP 443-5 Ext. and CP 443-1 EX4x, EX20, GX20 (in PROFINET IO mode)
 via interface module 	0
Number of pluggable S5 modules (via adapter apprund in control douise) may	6
capsule in central device), max. Number of IO Controllers	
	0
 integrated 	0

Number of operable FMs and CPs (recommended) Limited by number of solds and number of conections • CP, PIP CP+40: Limited by number of solds and number of solds and number of conections • PROFIBUS and Elhernet CPs 14: Of which 10 CP max, or IMs as DP master, 4 PROFINET controller maximum Solds • required solds 1 • required solds 1 1 Cock • required solds 1 • Resolution 1 ms 0 • Resolution 1 ms<	• via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20, max. 4 in central controller
 CP, PP CPA00: Linked by number of slots OF 441: Linked by number of slots and number of slots OF 441: Linked by number of slots and number of slots OF 441: Linked by number of slots of the transmum of transmum of the transmum of the transmum of transmum of the transmum of transmum of the transmum of transmum of	Number of operable FMs and CPs (recommended)	
PROFIBUS and Ethernet CPs Additional and number of connections Additional and the second secon	• FM	Limited by number of slots and number of connections
Imaginum Sists • required slots 1 Time of day Cock Object Ves • Istartware clock (real-time) Yes • Resolution 1 ms • Davision per day (unbuffered), max. 1.7.s, Power off • Davision per day (unbuffered), max. 6.8.s, For power On Operating hours counter 16 • Number further range 0 to 15 • Range of values SFCe 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Tornshing hours counter 16 • Number further range 0 to 15 • Range of values SFCe 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • Isteprized Yes • Cock synchronization Yes • supprized Yes • Isteprized Yes <	• CP, PtP	
required slots Inter of day Clock Hardware clock (real-time) Yes Hardware clock (real-time) Hardware	PROFIBUS and Ethernet CPs	
Time of day Clock • Hardware clock (real-time) Yes • retentive and synchronizable Yes • Resolution 1 ms • Deviation part day (buffered), max. 1.7 s; Power off • Deviation part day (buffered), max. 8.6 s; For power On Operating hours counter 16 • Numberf Number range 0 to 15 • Range of values SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • retentive Yes • Granularity 1 h • retentive Yes • to MPI, isave Yes • to MPI, isave Yes • to MPI, stater Yes • to DP, slave Yes • on Elbernet via NTP No: Via CP • on Elbernet via NTP No: Via CP • on Elbernet via NTP No: Via CP • on Fibernet via NTP No: Via CP <	Slots	
Clock • Hardware clock (real-time) Yes • retentive and synchronizable Yes • Resolution 1 ms • Deviation per day (buffered), max. 8.6 s; For power off • Deviation per day (buffered), max. 8.6 s; For power off • Deviation per day (buffered), max. 8.6 s; For power off • Number 16 • Number 16 • Number 16 • Number 16 • 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 Yes • Lo PP, Insater Yes • Lo PP, Insater Yes • Io DP, Insater Yes • Io DP, slave Yes • Io DP, Stave Yes • Io DP, Stave Yes • Io SF6 4DP No • Interfaces 1: MPUPROFIBUS DP Number of R 428 interfaces 1: Combined MPI / PROFIBUS DP • Number of A28 interfaces 1: Combined MPI / PROFIBUS DP • Ouput curret of the interface, max. 150 mA	 required slots 	1
 Hardware clock (real-lime) Yes retentive and synchronizable Yes retentive and synchronizable Time Deviation port day (buffered), max. 1.7 s; Power off Deviation port day (buffered), max. 8.6 s; For power On Operating hours counter Number/Number range 0 to 15 Range of values Granularity. 1.6 Number/Number range Clock synchronization eugeported Yes Clock synchronization eugeported Yes to MPI, fisher Yes to F64 DP No Time difference in system when synchronizing via MPI/max. Combined MPI / PROFIBUS DP No Time difference in system when synchronizing via MPI (MPROFIBUS DP to MPI (Max Yes Optical interface No Combined MPI / PROFIBUS DP No Therefore the interface, max. Solated Yes Protocols Protocols Protocols Protocols PROFIBUS DP master Yes PROFIBUS DP master Yes PROFIBUS DP master Yes PROFIBUS DP shave<td>Time of day</td><td></td>	Time of day	
• retentive and synchronizable Yes • Resolution 1 ms • Deviation per day (buffered), max. 8 s, For power On • Deviation per day (buffered), max. 8 s, For power On • Operating hours counter 16 • Number/Number range 10 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 Yes • Lop Privation Yes • In AP, master Yes • In AP, master Yes • In DP, master Yes • In DP, master Yes • In DP, master Yes • In AP, master Yes	Clock	
• Resolution 1 ms • Deviation per day (unbuffered), max. 17 s; Power off • Deviation per day (unbuffered), max. 8 s; For power On Operating hours counter 16 • Number 16 • Number 16 • Number 16 • Range of values Sto 2.3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • retentive Yes • Clocks synchronization Yes • Constructionization Yes • to MPI, fisher Yes • to MPI, fisher Yes • to DP, fisher Yes • to DF 9 stave Yes • to Fisher DP <td< td=""><td> Hardware clock (real-time) </td><td>Yes</td></td<>	 Hardware clock (real-time) 	Yes
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• Deviation per day (unbuffered), max. 8.6 a; For power On Operating hours counter 16 • Number/Number range 0 to 15 • Range of values SFCs 2, 3 and 4: 0 to 32787 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • retentive Yes • Clock synchronization - • Supported Yes • to MPI, master Yes • to MP, isave Yes • to MP, isave Yes • to MP, isave Yes • to DP, slave Yes • to DP, slave Yes • in AS, master Yes • in AS, master Yes • in AS, master Yes • in F964 DP No Time difference in system when synchronizing via - • MPI, max. 200 ms Interfaces 1 Interfaces 1 Interfaces 1 Interfaces No Interface type 1 x MPUPROFIBUS DP Interface No Interfaces	Resolution	1 ms
Operating hours counter 16 Number/Number range 0 to 15 Range of values SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • retentive Yes Clock synchronization Yes • supported Yes • to MPI, master Yes • to DP, slave Yes • to DP, slave Yes • in AS, master Yes • in AS, master Yes • in AS, master Yes • on Ethernet via NTP No; Via CP • on Ethernet via NTP No; Via CP • on Ethernet via Support O No • MPI, max. 200 ms Interfaces/bus type 1 × MPI/PROFIBUS DP Interface No Interface No Interface No Interface No Interface type MPI/PROFIBUS DP Interface No Interface No Interface type State • Output current of the interf	 Deviation per day (buffered), max. 	1.7 s; Power off
• Number 16 • Number/Number range 0 to 15 • Range of values SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • retentive Yes • Clock synchronization Yes • to MPI, master Yes • to MPI, slave Yes • to DP, master Yes • to DP, slave Yes • to DP, slave Yes • to DP, slave Yes • in AS, master Yes • in AS, master Yes • in DP, slave Yes • in DP, slave Yes • in DP, slave Yes • in AS, smater Yes • Interfaces No Time difference in system when synchronizing via • • MPI, max 200 ms Interfaces 1 x MPV/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP • No 1 Interface No Interface MPVPROFIBUS DP • RS 485 Yes • RS 485 Yes • PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP mast	 Deviation per day (unbuffered), max. 	8.6 s; For power On
• Number/Number range0 to 15• Range of valuesSFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours• Granularity1 h• retentiveYesClock synchronizationYes• to MPI, masterYes• to MPI, masterYes• to MPI, masterYes• to DP, masterYes• to DP, anserYes• to DP, anserYes• to DP, slaveYes• in AS, slaveYes• on Ethernet via NTPNo; Via CP• to IF 964 DPNo• to IF 964 DPYes• to IF 964 DPNo• to IF 964 DPNo• to IF 964 DPNo• to IF 964 DPYes• to IF 964 DPYe	Operating hours counter	
• Range of values SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours • Granularity 1 h • referentive Yes Clock synchronization Yes • to MPI, master Yes • to MPI, slave Yes • to DP, master Yes • to DP, master Yes • to DP, slave Yes • in AS, master Yes • in AS, slave Yes • on Ethernet via NTP No; Via CP • to IF 964 DP No Time difference in system when synchronizing via Interfaces Interfaces 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Interface MPI Interface type 1 x MPI/PROFIBUS DP Isolated Yes Interface type Yes • RS 485 Yes • Output current of the interface, max. Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • PROFIBUS DP slave	Number	16
• Granularity 1 h • retentive Yes • Supported Yes • Supported Yes • to MPI, master Yes • to DP, Islave Yes • in AS, islave Yes • in AS, islave Yes • on Ethernet via NTP No: Via CP • to IF 964 DP No Time difference in system when synchronizing via 000 ms • fuerfaces 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Optical interface No 1 Interface type MPI/PROFIBUS DP • Rotage Yes • Rotage Yes • Interface type Yes • Rotage Yes • No Interface type • Rotage Yes • Rotage Yes • Rotage Yes • No Yes • Rotage Yes • PROFIBUS DP master Yes • PROFIBUS DP mast	Number/Number range	0 to 15
• retentive Yes Clock synchronization	 Range of values 	SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2^31 - 1 hours
Clock synchronization Yes • to MPI, master Yes • to MPI, slave Yes • to DP, master Yes • to DP, slave Yes • to DP, slave Yes • in AS, master Yes • in AS, master Yes • in AS, master Yes • on Ethermet via NTP No: Via CP • on Ethermet via NTP No • on Ethermet via NTP No • on Ethermet via NTP No: Via CP • on Ethermet via NTP No • on Ethermet via NTP No • MPI, max. 200 ms Interfaces/bus type 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Optical interface No 1.Interface type MPI/PROFIBUS DP Isolated Yes • RS 485 Yes • RPROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections <	Granularity	1 h
• supported Yes • to MPI, master Yes • to DP, lasker Yes • to DP, master Yes • to DP, slave Yes • in AS, master Yes • in AS, slave Yes • on Ethernet via NTP No • to IF 964 DP No • Time difference in system when synchronizing via Interfaces • Interfaces/bus type 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP No Interface Interface type MPI/PROFIBUS DP Interface type MPI/PROFIBUS DP • RS 485 Yes • Output current of the interface, max. 150 mA • PROFIBUS DP master Yes • NPI Yes • NUmber of connections 32; if a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services - • PG/OP communication Yes • - S7 basic communication Yes • - S7 communication Yes • - S7 communication	retentive	Yes
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• in AS, master Yes • in AS, slave Yes • on Ethemet via NTP No; Via CP • to IF 994 DP No • MPI, max. 200 ms Interfaces 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Optical interface No 1 Interface type 1 x MPI/PROFIBUS DP Interface type 1 x MPI/PROFIBUS DP Interface type MPI/PROFIBUS DP Interface type MPI/PROFIBUS DP Isolated Yes • NPI Yes • NPI Yes • NPI Yes • NUmber of connections 22; 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 • Clobal data communication Yes • ST basic communication Yes • ST communication Yes • ST communication Yes	 to DP, master 	Yes
 in AS, slave Yes on Ethemet via NTP No; Via CP No Time difference in system when synchronizing via • MPI, max. 200 ms Interfaces Interfaces/bus type 1 x MPI/PROFIBUS DP Number of RS 485 interfaces No 1. Interface No No No Number of RS 485 interfaces No 1. Interface type Interface type Set 455 Yes 1. Output current of the interface, max. Yes PROFIBUS DP master Yes PROFIBUS DP slave Yes MPI Number of connections Set 455 Interface type Interface type Set 455 Set 455 Set 455 Set 455 Set 455<	• to DP, slave	Yes
• on Ethemet via NTP No; Via CP • to IF 964 DP No Time difference in system when synchronizing via • • MPI, max. 200 ms Interfaces 1 x MPI/PROFIBUS DP Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Optical interface No 1 Interface type MPI/PROFIBUS DP Isolated Yes Interface types MPI/PROFIBUS DP Isolated Yes Interface types 150 mA • NPP Yes Interface types Yes • NPROFIBUS DP master Yes • PROFIBUS DP master Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services — — PG/OP communication Yes — Routing Yes — S7 basic communication Yes — S7 communication Yes — S7 communication, as client Yes	• in AS, master	Yes
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Number of RS 485 interfaces 1; Combined MPI / PROFIBUS DP Optical interface No 1. Interface MPI/PROFIBUS DP Isolated Yes Interface types MPI/PROFIBUS DP Isolated Yes Interface types Yes Interface types Yes Interface types Yes Output current of the interface, max. 150 mA Protocols Yes • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services - - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 communication Yes - S7 communication Yes - S7 communication Yes - S7 communication, as client Yes	Interfaces	
Optical interface No 1. Interface Interface type Interface type MPI/PROFIBUS DP Isolated Yes Interface types Yes • RS 485 Yes • Output current of the interface, max. 150 mA Protocols Yes • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services - - PG/OP communication Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication Yes - S7 communication Yes	Interfaces/bus type	1 x MPI/PROFIBUS DP
1. Interface Interface type MPI/PROFIBUS DP Isolated Yes Interface types Yes • RS 485 Yes • Output current of the interface, max. 150 mA Protocols Yes • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services — — PG/OP communication Yes — Routing Yes — Global data communication Yes — S7 basic communication Yes — S7 communication Yes — S7 communication, as client Yes	Number of RS 485 interfaces	1; Combined MPI / PROFIBUS DP
Interface type MPI/PROFIBUS DP Isolated Yes Interface types • RS 485 • RS 485 Yes • Output current of the interface, max. 150 mA Protocols • • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services - - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication Yes - S7 communication Yes	Optical interface	No
Isolated Yes Interface types • RS 485 • RS 485 Yes • Output current of the interface, max. 150 mA Protocols • • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services — - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication Yes - S7 communication Yes	1. Interface	
Interface types • RS 485 Yes • Output current of the interface, max. 150 mA Protocols ************************************	Interface type	MPI/PROFIBUS DP
• RS 485 Yes • Output current of the interface, max. 150 mA Protocols ************************************	Isolated	Yes
• Output current of the interface, max.150 mAProtocols• MPIYes• PROFIBUS DP masterYes• PROFIBUS DP slaveYesMPI• Number of connections32; 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/sServices- PG/OP communicationYes- RoutingYes- Global data communicationYes- S7 basic communicationYes- S7 communicationYes- S7 communication, as clientYes	Interface types	
Protocols Yes • MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI Yes • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services - - PG/OP communication Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes	• RS 485	Yes
• MPI Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI	 Output current of the interface, max. 	150 mA
• PROFIBUS DP master Yes • PROFIBUS DP slave Yes MPI	Protocols	
• PROFIBUS DP slave Yes MPI 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services Yes - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication, as client Yes	• MPI	Yes
MPI • Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 • Transmission rate, max. 12 Mbit/s Services — — PG/OP communication Yes — Routing Yes — Global data communication Yes — S7 basic communication Yes — S7 communication Yes — S7 communication Yes — S7 communication, as client Yes	PROFIBUS DP master	Yes
 Number of connections 32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 Transmission rate, max. 12 Mbit/s Services PG/OP communication Routing Global data communication Yes Global data communication Yes S7 basic communication Yes S7 communication Yes S7 communication, as client Yes 	PROFIBUS DP slave	Yes
 Transmission rate, max. 12 Mbit/s Services PG/OP communication Yes Global data communication Yes Global data communication S7 basic communication Yes S7 communication Yes S7 communication, as client Yes 	MPI	
Services — PG/OP communication Yes — Routing Yes — Global data communication Yes — S7 basic communication Yes — S7 communication Yes — S7 communication, as client Yes	Number of connections	
— PG/OP communicationYes— RoutingYes— Global data communicationYes— S7 basic communicationYes— S7 communicationYes— S7 communication, as clientYes	• Transmission rate, max.	12 Mbit/s
— RoutingYes— Global data communicationYes— S7 basic communicationYes— S7 communicationYes— S7 communication, as clientYes	Services	
— Global data communication Yes — S7 basic communication Yes — S7 communication Yes — S7 communication, as client Yes	— PG/OP communication	Yes
— S7 basic communicationYes— S7 communicationYes— S7 communication, as clientYes	— Routing	Yes
— S7 communication Yes — S7 communication, as client Yes	— Global data communication	Yes
— S7 communication, as client Yes	— S7 basic communication	Yes
	— S7 communication	Yes
	- S7 communication, as client	Yes
- S7 communication, as server 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
Number of DP slaves, max.	32
Services	
— PG/OP communication	Yes
— Routing	Yes; S7 routing
— Global data communication	No
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes
— SYNC/FREEZE	Yes
- Activation/deactivation of DP slaves	Yes
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— User data per DP slave, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
PROFIBUS DP slave	
Number of connections	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
	No
 — Direct data exchange (slave-to-slave communication) 	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
Open IE communication	
ISO-on-TCP (RFC1006)	Via CP 443-1 Adv. and loadable FB
— Data length, max.	1 452 bytes via CP 443-1 Adv.
Web server	No
• supported	No
Isochronous mode	
Equidistance	Yes
Number of DP masters with isochronous mode	1
User data per isochronous slave, max.	244 byte

shortest clock pulse	1.5 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	31
processing	21: When using Alarm S/SO and Alarm D/DO
 Number of connectable OPs with message processing 	31; When using Alarm_S/SQ and Alarm_D/DQ
Data record routing	Yes
Global data communication	
supported	Yes
 Number of GD loops, max. 	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	16
 Size of GD packets, max. 	54 byte
 Size of GD packet (of which consistent), max. 	1 variable
S7 basic communication	
supported	Yes
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	1 variable
S7 communication	
 supported 	Yes
• as server	Yes
 as client 	Yes
 User data per job, max. 	64 kbyte
 User data per job (of which consistent), max. 	462 byte
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 	24/24
orders per CPU, max.	
Standard communication (FMS)	
supported	Yes; Via CP and loadable FB
Number of connections	
overall	32
 usable for PG communication 	31
 reserved for PG communication 	1
 adjustable for PG communication, max. 	0
 usable for OP communication 	
	31
- reserved for OP communication	31 1
— adjustable for OP communication, max.	
— adjustable for OP communication, max.• usable for S7 basic communication	1
— adjustable for OP communication, max.	1 0
— adjustable for OP communication, max.• usable for S7 basic communication	1 0 30
 adjustable for OP communication, max. usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, max. usable for S7 communication 	1 0 30 0
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 adjustable for OP communication, max. 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 max. usable for routing reserved for routing 	1 0 30 0 0 30 0 0 0 15 0
 adjustable for OP communication, max. 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, max. usable for routing reserved for routing adjustable for routing, max. 	1 0 30 0 0 30 0 0 0 15 0
 adjustable for OP communication, max. 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 adjustable for routing, max. S7 message functions 	1 0 30 0 0 30 0 0 15 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with
 adjustable for OP communication, max. 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 adjustable for S7 communication adjustable for S7 communication, max. usable for routing reserved for routing adjustable for routing, max. S7 message functions Number of login stations for message functions, max. 	1 0 30 0 0 30 0 0 0 15 0 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC)
 adjustable for OP communication, max. 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 adjustable for S7 communication, max. usable for routing reserved for routing adjustable for routing, max. S7 message functions Number of login stations for message functions, max. 	1 0 30 0 0 30 0 0 15 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC) Yes
 adjustable for OP communication, max. 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 adjustable for S7 communication, max. usable for routing reserved for routing reserved for routing, max. S7 message functions Number of login stations for message functions, max. Symbol-related messages SCAN procedure 	1 0 30 0 0 30 0 0 0 15 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC) Yes Yes
 adjustable for OP communication, max. 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 adjustable for S7 communication, max. usable for routing reserved for routing reserved for routing adjustable for routing, max. S7 message functions Number of login stations for message functions, max. Symbol-related messages SCAN procedure Program alarms 	1 0 30 0 0 30 0 0 0 15 0 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC) Yes Yes Yes
 adjustable for OP communication, max. usable for S7 basic communication 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 reserved for routing, max. S7 message functions Number of login stations for message functions, max. Symbol-related messages SCAN procedure Program alarms Process diagnostic messages 	1 0 30 0 0 30 0 0 0 15 0 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC) Yes Yes Yes Yes
 adjustable for OP communication, max. usable for S7 basic communication 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 adjustable for S7 communication adjustable for S7 communication, max. usable for routing reserved for routing adjustable for routing, max. S7 message functions Number of login stations for message functions, max. Symbol-related messages SCAN procedure Program alarms Process diagnostic messages simultaneously active Alarm-S blocks, max. 	1 0 30 0 0 30 0 0 15 0 0 31; Max. 31 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm_8 and Alarm_P (e.g. WinCC) Yes Yes Yes Yes Yes Yes Solution Solution (Solution (Solut

evided index 190 Process control messages Yes Number of archives that can og on simultaneously (SFB 37 AR_SEND) 4 Sin AR_SEND 255 • worvall, max. 256 • notoo ng ng nax. 256 • notoo ng ng nax. 256 • notoo ng ng nax. 0 • with 500, nog ng nax. 0 • with 500, nog ng nax. 0 • with 500, nog ng nax. 1 Test commissioning functions 4 Status book Yes. • with 500, nog ng nax. 1 Test commissioning functions 4 StatusControl variable Yes. Number of variables, max. 100 * StatusControl variable Inputsoutputs, nemory bits, DBs, distributed I/Os, timers, counters * Oroting, variables Inputsoutputs, bit menories, distributed I/Os, timers, counters • Number of variables, max. 200 • Forting Yes • Number of variables, max. 201 • Prost 202 • Aubits of variables, max. 202	communication blocks, max	
Process control messages Yes 37 AB, SEND; 4 37 AB, SEND; 4 37 AB, SEND; 4 Winther of anchives that can log on simultaneously (SFB 4 • In 100 ms grid, max. 258 • In 100 ms grid, max. 258 • In 100 ms grid, max. 258 • With 50, 100 ms grid, max. 0 • with 50, 100 ms grid, max. 0 • with 50, 100 ms grid, max. 0 • with 50, 100 ms grid, max. 1 Test commissioning functions 558/stocontrol Status block Yes, Up to 2 simultaneously Single stop Yes • Winter of Availables, max. 70. Status/scontrol • Status/scontrol Yes • Status/scontrol Yes • Forcing variables, max. Forcing variables, max. • Forcing variables, max. Fea • Forcing variables, max. Fea • Present Yes • Number of availables, max. Fea • Staut-scontrol Yes • Staut-scontrol Yes	communication blocks, max.	150
Number of archives that an log on simultaneously (SFB 7AR _SEN) 4 Number of messages - • overall max. 258 • in 600 ms grid, max. 258 • in 600 ms grid, max. 258 • with 100 ms grid, max. 0 • with 500, 1000 ms grid, max. 1 • Status book. Yes, Up to 2 simulaneously. Single step Yes. • Status control variable Yes. • Status control variables, max. 70. Statuscontrol • Status control variable, max. 1 • Status control variable, max. 1 • Status control variable, max. 70. Statuscontrol • Status control variable, max. 1 • Status of variables, max. 1 • Status of variable, max. 200 • analytic on variable, max. <td></td> <td></td>		
37 AR_SEND) 9 vorral, max. 0 vorral, max. 1 n 00 ms grid, max. 256 • in 100 ms grid, max. 256 • in 100 ms grid, max. 256 • with 500, 100 ms grid, max. 0 • with 500, 100 ms grid, max. 0 • with 500, 100 ms grid, max. 1 Test commissional values • with 500, 100 ms grid, max. 1 Test commissional values • with 500, 100 ms grid, max. 1 Test commissionality functions Single step Yes: Up to 16 variable states Input/sourputs, memory bits, DEs, distributed I/Os, timers, counters • Number of variables, max. • Forcing variables Input/sourputs, bit memories, distributed I/Os • Number of variables, max. 0 agnosts buffer • Procing variables • Individuable • Number of entries, max. 0 agnosts buffer • preset 1 agnosts buffer • preset • Diagnosts buffer • preset • Jostable • Standards, approval • Preset • Data preval • Othoreact, ap		
Number of messages - • overall max. 26 • In 100 ms grd, max. 26 • In 100 ms grd, max. 26 • In 100 ms grd, max. 26 • with 100 ns grd, max. 0 • with 500, 1000 ms grd, max. 1 • with 500, 1000 ms grd, max. 1 • Status block Yes. Up to 2 simultaneously Simple step Yes. Up to 2 simultaneously • Status control variable Yes. Up to 16 variable tables • Variables Yes. Up to 16 variable tables • Variables Inputs/outputs, bit memory bits, DBs, distributed I/Os, timers, counters • Variables, max. 10 • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. 10 • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of entries, max. 200 • Parent Yes • Proceing, variables, entries Yes • Parent Yes • Parent Yes • Date rad out Yes Standardst, approval <td></td> <td>-</td>		-
• In 100 ms grid, max. 0 • In 100 ms grid, max. 256 Number of additional values 0 • with 100 ms grid, max. 1 Test connelsationing functions 1 Test connelsationing functions 4 Situs bock Yes: Up to 15 variable tables Number of breakpoints 4 Situs/control Yes: Up to 15 variable tables • Variables Inputs/outputs, memory bits, DBs, distributed t/Os, timers, counters • Forcing Yes: Up to 16 variable tables • Number of variables, max. 70; Status/control • Forcing Inputs/outputs, memory bits, DBs, distributed t/Os, timers, counters • Number of variables, max. 200 • Forcing, variables Inputs/outputs, bit memories, distributed t/Os • Number of variables, max. 200 • adjustable Yes • Status/control Yes • Status/control Yes • Status/control Yes • Status/control Yes • Corting, variables Yes • Forcing Yes • Forcing Yes • Status/control Yes • Status/control Yes • Status/control Yes • Status/control Yes		
• in 500 ms grid, max.266Number of additional values0• with 500, 1000 ms grid, max.0• with 500, 1000 ms grid, max.1Test commissioning functionsYes Up to 2 simultaneouslyStatus blockSingle stepStatus blockYes Up to 16 variable tables• Number of breakpoints4Status blockYes Up to 16 variable tables• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.70. Status/countrol• ForcingYes• Forcing, variablesInputs/outputs, bit memories, distributed I/Os• Number of variables, max.64• Parcing, variablesInputs/outputs, bit memories, distributed I/Os• Number of variables, max.64• ParcingYes• Forcing, variables100• Number of entries, max.64• ParcetYes• Number of entries, max.200- adjustableYes• nadjustableYes• Standards, approval, contificatesYes• Ce markYesCE markYesCASA approvalYes• AdjustableYes• AdjustableYes• AdjustableYes• AdjustableYes• Commary ContCitYes• Commary ContCitYes• Cardification sareasYes• Commary ContCitYes• AdjustableYes• AdjustableYes• AdjustableYes<	• overall, max.	256
• In 1000 ms grid, max. 266 Number of additional values 0 • with 500, 1000 ms grid, max. 1 1 State contrainsborning functions 1 State sta	 in 100 ms grid, max. 	0
Number of additional values 0 • with 100 ms grid, max. 0 • with 500, 1000 ms grid, max. 1 Test commissioning functions Yes: Up to 2 simultaneously Single step Yes Number of breakpoints 4 • Status block Yes: Up to 16 variable tables • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Variables Inputs/outputs, memory bits, DBs, distributed I/Os • Forcing Yes • Forcing Yes • Forcing Yes • Forcing Yes • Number of variables, max. 64 Diagnostic buffer - • present Yes • Number of variables, max. 200 - adjustable Yes - adjustable Yes Standards, approval Yes Standards, approval Yes Canderak Yes Canderak Yes Standards, approval Yes UL approval Yes UL approval	• in 500 ms grid, max.	256
 with 100 ms grid, max. with 500, 1000 ms grid, max. 1 Test continisationing functions Status block Yes; Up to 2 simultaneously Single step Yes; Up to 16 variable max. Status/control variable Ves; Up to 16 variable tables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Number of variables, max. Forcing Forcing, variables Inputs/outputs, bit memories, distributed I/Os, timers, counters Profing Forcing, variables Number of variables, max. G4 Diagnostic turfer opresent Present Ves Ves Ves Ves Status/control Ves Ves Opresent Ves Ves Ves Ves Ves CSA approval Ves CSA approval Ves Ves UL approval Ves Ves Ves UL approval Ves Statuston versent versent versent versent versent versent v	• in 1000 ms grid, max.	256
• with 500, 100 [°] neg with, max. 1 Test commissioning functions Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status block Yes; Up to 18 variable tables • Variables Inputs/outputs, memory bits, Dis, distributed I/Os, timers, counters • Variables, max. 70; Status/Control • Forcing Yes • Forcing, variables, max. 64 Diagnostic butter Yes • Forcing, variables, max. 64 Diagnostic butter Yes • present 200 • Number of variables, max. 200 • Number of variables, max. 200 • Parsent 200 • adjustable Yes • present 200 - adjustable Yes Standards, approval. Yes Standards, approval. Yes CSA approval Yes Ottomerty C-Ticky Yes • ATEX ATEX II 3G Ex nA IIC T4 Ge Ambient conditions 7 • ArtEX II 3G Ex nA IIC T4 Ge • Antext II 3G Ex nA IIC T4 Ge • Antext II 3G Ex nA IIC T4 Ge • Ordinards areas 7 • Configuration / header Yes •	Number of additional values	
Test commissioning functions Yes; Yes; Up to 2 simultaneously Status block Yes; Up to 16 variable subject Yes; Up to 16 variable subject Number of breakpoints 4 Status/control Yes; Up to 16 variable subject • Status/control variables Yes; Up to 16 variable subject • Variables Yes; Up to 16 variable tables • Number of variables, max, 70; Status/control • Forcing, variables Inputs/outputs, bit memory bits, DBs, distributed I/Os, timers, counters • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Forcing or of variables, max, 200 • Forcing or of enties, max, 200 • Present Yes • Number of enties, max, 200 • Can be read out Yes • CE mark Yes • CE mark Yes • CE mark Yes • CE mark Yes • Can be read out	-	0
Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control 4 Status/control Yes; Up to 16 variable tables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 70: Status/control Forcing • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. Forcing, variables • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. E4 Diagnostic buffer Yes • present Yes • Number of variables, max. 200 - adjustable Yes - adjustable Yes - present Yes • Can be read out Yes Standards, approvals, certificates Yes CE mark Yes CSA approval Yes RCM (formerly C-TICK) Yes KC approval Yes RAC (formerly Gost-R) Yes Lag (formerly Gost-R) Yes VC approval Yes • ATEX ATEX II 3G Ex nA IIC 74 Gc Ambient temperature during operation 7 • Ninh. 0 °C <td></td> <td>1</td>		1
Single step Yes Number of breakpoints 4 Status/control 4 • Status/control Yes; Up to 16 variable tables • Variables Input/solupus, memory bits, DBs, distributed I/Os, timers, counters • Number of variables, max. 70: Status/control • Forcing Yes • Forcing, variables, max. 70: Status/control • Forcing, variables, max. 64 • Number of variables, max. 64 • Diagnostic buffer Yes • number of entries, max. 200 - adjustable Yes • Number of entries, max. 200 - preset 120 Service data Yes • Can be read out Yes Standards, approval Yes CE mark. Yes CE mark. Yes CLUS Yes ROM (formerly C-TICK) Yes KC approval Yes ACC officiers Yes Act approval Yes • ATEX ATEX II 3G Ex nA IIC T4 Ge Antient temperature during operation • min. • min. 0 °C • ontrol variable stres Yes Configuration / boader Yes • ATEX		
Number of breakpoints 4 Status/control variable Yes; Up to 16 variable tables • Status/control variables, max. 70: Status/control Forcing Yes • Number of variables, max. 70: Status/control • Forcing, variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. 64 Diagnostic buffer • • present Yes • Justable Yes • adjustable Yes • preset 120 Standards, approvals, cortificatos		Yes; Up to 2 simultaneously
Status/control • Status/control variable • Variables • Number of variables, max. Forcing • Forcing, variables, max. • Forcing, variables, max. • Forcing, variables, max. • Porcing • Forcing, variables, max. • Diagnostic buffer • present • Number of variables, max. • Aumber of variables, max. • Aumber of variables, max. • Number of variables, max. • Number of entries, max. • Number of entries, max. • Present • Number of entries, max. • Can be read out • Can be read out • CE mark • Can be read out • Can be read out • UL approval • Ges Approval • Can be read out • Standards, approval • Can be read out		
Status/control variable Variables Variables Variables Number of variables, max. 70; Status/control Forcing, Forcing, variables, max. 70; Status/control Forcing, variables, max. 70; Status/control Forcing, variables, max. 70; Status/control Forcing, variables, max. 64 Diagnostic buffer • present versent v		4
• Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters • Forcing 70; Status/control • Forcing Yes • Forcing variables, max. 64 Diagnostic buffer 200 • number of variables, max. 200 • adjustable Yes • Present 120 Service data 200 - adjustable Yes • Can be read out Yes Standards, approvals, cortificates 201 CE mark Yes CE mark Yes UL approval Yes CLus Yes FM approval Yes CM (formerly C-TICK) Yes FM approval Yes CA approval Yes CM (formerly C-TICK) Yes FM approval Yes CM (formerly C-TICK) Yes EAC (formerly Cost-R) Yes Standards, approval Yes CM (formerly C-TICK) Yes EAC (formerly Cost-R) Yes EAC (formerly Cost-R) Yes Standards, approval Yes • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions On C • max. 60 °C <td></td> <td></td>		
• Number of variables, max. 70; Status/control Forcing • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. 04 Diagnostic buffer • present Yes • number of entries, max. 200 adjustable Yes - preset 120 Service data • can be read out Yes Standards, approvals, certificates CE mark Yes CSA approval Yes culus Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes RCM inhazardous areas • ATEX ATEX II 3G Ex nA IIC T4 Gc Anbient conditions Anbient conditions Anbient conditions Configuration / header Compared set to consistent data in process image Yes System function blocks (SFD) see instruction list Notext condis (SFC) see instruction list <td></td> <td></td>		
Forcing Yes Forcing, variables Inputs/outputs, bit memories, distributed I/Os Number of variables, max. 64 Diagnostic buffer present question of entries, max. 200 - adjustable Yes Number of entries, max. 200 - adjustable Yes Service data (can be read out) Yes Standards, approvals, certificates CE mark Yes Que approval Yes UL approval Yes UL approval Yes CSA approval Yes Candards, approval Yes UL approval Yes Question of the entries of		
• Forcing Yes • Forcing, variables Inputs/outputs, bit memories, distributed I/Os • Number of variables, max. 64 Diagnostic buffer Yes • Number of entries, max. 200		/U; Status/control
Forcing, variables Number of variables, max. 64 Diagnostic buffer present versent versest versett verse	-	Vec
Number of variables, max. Diagnostic buffer erresent versent versent	-	
Diagnostic buffer Yes • present Yes • Number of entries, max. 200	-	
• present Yes • Number of entries, max. 200		04
Number of entries, max. 200		Vec
	•	
preset 120 Service data • can be read out Yes Standards, approvals, certificates CE mark Yes CE mark Yes Yes CL approval Yes Yes UL approval Yes Yes cULus Yes Yes CM (formerly C-TICK) Yes Yes RCM (formerly C-TICK) Yes Yes Use in hazardous areas Yes Yes • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation • nin. • min. 0 °C configuration / header Configuration / header • Command set see instruction list • Nesting levels 7 • Acces to consistent data in process image Yes • System function blocks (SFE) see instruction list • System function blocks (SFE) see instruction list • Programming language Yes - LAD Yes - FBD Yes		
Service data Yes Standards, approvals, cortificates Yes CE mark Yes CSA approval Yes UL approval Yes UL us Yes cULus Yes cULus Yes cULus Yes RCM (formerly C-TICK) Yes RCA (formerly Cost-R) Yes Use in hazardous areas Yes • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions ATEX II 3G Ex nA IIC T4 Gc Ambient conditions 0 °C • min. 0 °C • max. 60 °C configuration / header Configuration software • STEP 7 Yes configuration software see instruction list • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function locks (SFB) see instruction list • Nesting language res - LAD Yes - LAD Yes	-	
• can be read out Yes Standards, approvals, cortificates CE mark Yes CSA approval Yes UL approval Yes UL approval Yes cULus Yes CULus Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes RCM (formerly C-TICK) Yes EAC (formerly Gost-R) Yes Use in hazardous areas • • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions Ambient temperature during operation • min. 0 °C • max. 60 °C configuration / header Configuration software • STEP 7 Yes configuration software 9 • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function blocks (SFB) see instruction list • System function blocks (SFB) see instruction list Programming language — - LAD Yes - FBD Yes		120
Standards, approvals, certificates CE mark Yes CSA approval Yes UL approval Yes ULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly C-TICK) Yes Lus approval Yes EAC (formerly Cost-R) Yes Use in hazardous areas • • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient conditions • Ambient temperature during operation 0 °C • min. 0 °C • max. 60 °C Configuration / header • Configuration / programming / header • • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function softs(SFE) see instruction list • Nesting language - - LAD Yes - FBD Yes		Yes
CE mark Yes CSA approval Yes UL approval Yes cULus Yes FM approval Yes RCM (formerly C-TICK) Yes KC approval Yes EAC (formerly C-TICK) Yes KC approval Yes EAC (formerly Cost-R) Yes Use in hazardous areas • • ATEX ATEX II 3G Ex nA IIC T4 Gc Ambient temperature during operation • • min. 0 °C • offiguration / header • Configuration software • • STEP 7 Yes configuration / header • • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes • System function s(SFC) see instruction list • System function blocks (SFB) see instruction list Programming language — — LAD Yes — FBD Yes		
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• System function blocks (SFB) see instruction list Programming language - LAD Yes - FBD Yes	 Access to consistent data in process image 	Yes
Programming language Yes — LAD Yes — FBD Yes	 System functions (SFC) 	see instruction list
LAD YesFBD Yes	 System function blocks (SFB) 	see instruction list
— FBD Yes	Programming language	
	— LAD	Yes
- STL Yes		Yes
	— STL	Yes

— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
configuration / programming / number of simultaneously a	active SFC / header
 number of simultaneously active system functions (SFC) / with DPSYC_FR 	2; SFC 11; per interface
 number of simultaneously active system functions (SFC) / with 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 a	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	
 User program protection/password protection 	Yes
Dimensions	
Width	25 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	700 g
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