6ES7416-2FN05-0AB0

Data sheet



************ Replacement part ********* SIMATIC S7-400, CPU 416F-2, Central processing unit with: work memory 5.6 MB, (2.8 MB code, 2.8 MB data), 1st interface MPI/DP 12 Mbit/s, 2nd interface PROFIBUS DP Can be used with software package Distributed Safety as of V5.2+SP2

Figure similar

Product type designation CPU 416F-2		
HW functional status 03 Firmware version V5.3 Formware version V5.	General information	
Firmware version V5.3 Product function I socknonous mode Frogramming package Programming package Frogramming package From backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 5 V DC, max. From backplane bus 2 V DC, max. From backplane bus 5 V DC, max. From back	Product type designation	CPU 416F-2
Product function Isochronous mode Isochronous mode Ingineering with Programming package STEP 7 V5.3 SP2 or higher with hardware update. Distributed Safety V5.2 SP2 or higher STEP 7 V5.3 SP2 or higher with hardware update. Distributed Safety V5.2 SP2 or higher STEP 7 V5.3 SP2 or higher with hardware update. Distributed Safety V5.2 SP2 or higher STEP 7 V5.3 SP2 or higher with hardware update. Distributed Safety V5.2	HW functional status	03
■ Isochronous mode ■ Yes; For PROFIBUS only Engineering with ■ Programming package ■ STEP 7 V5.3 SP2 or higher with hardware update, Distributed Safety V5.2 SP2 or higher CIR - Configuration in RUN CIR synchronization time, basic load ■ 100 ms CIR synchronization time, time per I/O byte ■ 10 µs Supply voltage Rated value (DC) ■ Power supply via system power supply Input current from backplane bus 5 V DC, typ. ■ 0.9 A from backplane bus 5 V DC, max. ■ 1.1 A from backplane bus 24 V DC, max. ■ 300 mA; 150 mA per DP interface Fower loss Power loss, typ. ■ 4.5 W Memory Type of memory ■ other Work memory ■ integrated (for program) ■ integrated (for data) ■ integrated (for data) ■ expandable FEPROM ■ expandable FEPROM ■ expandable FEPROM, max. ■ integrated RAM,	Firmware version	V5.3
Engineering with Programming package STEP 7 V5.3 SP2 or higher with hardware update, Distributed Safety V5.2 SP2 or higher CIR synchronization time, basic load 100 ms CIR synchronization time, time per I/O byte 10 µs Supply voltage Rated value (DC) Input current From backplane bus 5 V DC, typ. Power supply via system power supply Input bus 5 V DC, max. In A from backplane bus 5 V DC, max. In Mackplane bus 5 V DC, max. In Mackplane bus 24 V DC, max. In Mackplane bus 24 V DC, max. In Mackplane bus 24 V DC, max. Power loss, typ. Power loss, typ. Integrated SAB, Mackplane Integrated (for program) Integrated (for program) Integrated (for program) Integrated (for fotata) Explandable EPROM Explandable FEPROM Exp	Product function	
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or higher CIR - Configuration in RUN CIR synchronization time, basic load 100 ms CIR synchronization time, time per I/O byte 10 µs Supply voltage Rated value (DC) Power supply via system power supply Input current from backplane bus 5 V DC, typ. 0.9 A from backplane bus 5 V DC, max. 1.1 A from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface from interface 5 V DC, max. 90 mA; At each DP interface Power loss, typ. 4.5 W Memory Type of memory other Work memory • integrated (for program) 2.8 Mbyte • integrated (for data) 2.8 Mbyte • integrated (for data) 2.8 Mbyte • expandable FEPROM Yes; with Memory Card (FLASH) • expandable FEPROM, max. 64 Mbyte • integrated RAM, max. 1 Mbyte • expandable RAM, max. 64 Mbyte • resent Yes • with battery Yes; all data • without battery	Engineering with	
CiR synchronization time, basic load CiR synchronization time, time per I/O byte Supply voltage Rated value (DC) Input current from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 5 V DC, max. 1.1 A from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface from interface 5 V DC, max. 90 mA; At each DP interface Power loss, typ. 4.5 W Memory Type of memory other Work memory integrated (for program) integrated (for data) integrated (for data) expandable FEPROM expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM expandable RAM, max. Backup expended Adata expendable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandable RAM expandable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandable RAM expandable RAM, max. expandable RAM expandable RAM expandable RAM, max. expandable RAM expandable RAM expandable RAM, max. expandable RAM e	Programming package	
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Input current from backplane bus 5 V DC, typ. from backplane bus 5 V DC, max. from backplane bus 24 V DC, max. from backplane bus 24 V DC, max. 300 mA; 150 mA per DP interface from interface 5 V DC, max. 90 mA; At each DP interface Power loss Power loss, typ. 4.5 W Memory Type of memory integrated integrated (for program) integrated (for program) integrated (for data) expandable vexpandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM, max. integrated RAM expandable RAM ex	Supply voltage	
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from interface 5 V DC, max. Power loss Power loss, typ. 4.5 W Memory Type of memory integrated integrated (for program) integrated (for data) expandable expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM expandable RAM for the Mbyte fo	from backplane bus 5 V DC, max.	1.1 A
Power loss, typ. A.5 W Memory Type of memory other Work memory integrated integrated (for program) integrated (for data) expandable vexpandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM expandable RAM expandable RAM expandable RAM for this with Memory Card (RAM) expandable RAM expandable RAM for this with Memory Card (RAM) expandable RAM for this with Memory Card (RAM) for this with Mem	from backplane bus 24 V DC, max.	300 mA; 150 mA per DP interface
Power loss, typ. Memory Type of memory other Work memory integrated integrated (for program) integrated (for data) expandable expandable Expandable FEPROM expandable RAM expandable R	from interface 5 V DC, max.	90 mA; At each DP interface
Type of memory work memory integrated integrated (for program) integrated (for data) integrated (for data) expandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM expandable RAM, max. full Mbyte expandable RAM expandable RAM, max. full Mbyte expandable RAM expandable RAM, max. full Mbyte expandable RAM expandable RAM, max. full Mbyte expandable RAM expandable RAM, max. full Mbyte expandable RAM, max. full RAM, max. fu	Power loss	
Type of memory work memory integrated integrated (for program) integrated (for data) expandable expandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. integrated RAM expandable RAM expandable RAM expandable RAM, max. full Mbyte expandable RAM expandable	Power loss, typ.	4.5 W
Work memory integrated integrated (for program) integrated (for data) expandable expandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM, max. full Mbyte expandable RAM, max. full Mbyte expandable RAM, max. full Mbyte full Mb	Memory	
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 integrated (for data) expandable No Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM, max. expandable RAM, max. Yes; with Memory Card (FLASH) expandable RAM expandable RAM, max. Backup present with battery without battery Yes without battery No 	• integrated	5.6 Mbyte
 expandable Load memory expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM, max. for Mbyte expandable RAM expandable RAM, max. expandable RAM, max. for Mbyte Backup present with battery with out battery No Ves; with Memory Card (RAM) 64 Mbyte Backup present with battery No No No 	integrated (for program)	2.8 Mbyte
Load memory	integrated (for data)	2.8 Mbyte
 expandable FEPROM expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM expandable RAM, max. for Mbyte expandable RAM, max. expandable RAM, max. for Mbyte Backup present with battery with battery without battery No 	expandable	No
 expandable FEPROM, max. integrated RAM, max. expandable RAM expandable RAM, max. expandable RAM, max. Backup present with battery without battery No 	Load memory	
 integrated RAM, max. expandable RAM expandable RAM, max. 64 Mbyte Backup present with battery without battery No 1 Mbyte Yes; with Memory Card (RAM) 64 Mbyte Find the properties of the properties	 expandable FEPROM 	Yes; with Memory Card (FLASH)
 expandable RAM expandable RAM, max. 64 Mbyte Backup present with battery without battery Yes; all data without battery No	 expandable FEPROM, max. 	64 Mbyte
 expandable RAM, max. Backup present with battery without battery No 	integrated RAM, max.	1 Mbyte
Backup	• expandable RAM	Yes; with Memory Card (RAM)
 present with battery without battery No 	expandable RAM, max.	64 Mbyte
 with battery without battery No 	Backup	
without battery No	• present	Yes
	with battery	Yes; all data
Battery	without battery	No
	Battery	

Rackun hattery	
Backup battery	125 μA; up to 40 °C
Backup current, typ.	
Backup current, max. Parking time are as a second control of the control of	550 µA
Backup time, max.	See reference manual, module data, Chapter 3.3
Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	30 ns
for word operations, typ.	30 ns
for fixed point arithmetic, typ.	30 ns
for floating point arithmetic, typ.	90 ns
CPU-blocks	
DB	
Number, max.	10 000; Number range: 1 to 16000
Size, max.	64 kbyte
FB	
Number, max.	5 000; Number range: 0 to 7999
Size, max.	64 kbyte
FC	
Number, max.	5 000; Number range: 0 to 7999
• Size, max.	64 kbyte
ОВ	
Number, max.	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
Number of time alarm OBs	8; OB 10-17
Number of delay alarm OBs	4; OB 20-23
Number of cyclic interrupt OBs	9; OB 30-38 (shortest cycle that can be set = 500 µs)
Number of process alarm OBs	8; OB 40-47
Number of DPV1 alarm OBs	3; OB 55-57
Number of isochronous mode OBs	4; OB 61-64
Number of multicomputing OBs	1; OB 60
Number of background OBs	1; OB 90
Number of startup OBs	2; OB 100, 102
Number of asynchronous error OBs	9; OB 80-88
Number of asynchronous error OBs	2; OB 121, 122
Nesting depth	2, 00 121, 122
-	24
per priority class additional within an array OR	2
additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— preset	No times retentive
Time range	
— lower limit	10 ms
— upper limit	9 990 s

	V
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	Tatal warding and load manager (with hadren hattam)
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	16 khyto: Siza of hit momony address area
Size, max. Determining a special place.	16 kbyte; Size of bit memory address area Yes
Retentivity available Retentivity project	MB 0 to MB 15
 Retentivity preset Number of clock memories 	
Local data	8; in 1 memory byte
adjustable, max.	32 kbyte
• preset	16 kbyte
Address area	10 KByte
I/O address area	
• Inputs	16 kbyte
Outputs	16 kbyte
Process image	
Inputs, adjustable	16 kbyte
Outputs, adjustable	16 kbyte
• Inputs, default	512 byte
Outputs, default	512 byte
consistent data, max.	244 byte
 Access to consistent data in process image 	Yes
Subprocess images	
 Number of subprocess images, max. 	15
Digital channels	
• Inputs	131 072
— of which central	131 072
Outputs	131 072
— of which central	131 072
Analog channels	
• Inputs	8 192
— of which central	8 192
Outputs	8 192
— of which central	8 192
Hardware configuration	
Number of expansion units, max.	21
connectable OPs	63
Multicomputing Interface modules	Yes; 4 CPUs max. (with UR1 or UR2)
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	1, 111 100 2
• integrated	2
• via CP	10; CP 443-5 Extended
• via IM 467	4
Mixed mode IM + CP permitted	No; IM 467 not suitable for use with CP 443-5 Ext. and CP 443-1 EX4x, EX20, GX20 (in PROFINET IO mode)
• via interface module	0
 Number of pluggable S5 modules (via adapter capsule in central device), max. 	6
Number of IO Controllers	
• integrated	0
• via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20, max. 4 in central controller
Number of operable FMs and CPs (recommended)	
● FM	Limited by number of slots and number of connections
● CP, PtP	CP 440: Limited by number of slots; CP 441: limited by number of connections
 PROFIBUS and Ethernet CPs 	14; Of which 10 CPs max. or IMs as DP master, 4 PROFINET controller maximum
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Slots	
• required slots	1
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Resolution	1 ms
 Deviation per day (buffered), max. 	1.7 s; Power off
 Deviation per day (unbuffered), max. 	8.6 s; For power On
Operating hours counter	
Number	16
 Number/Number range 	0 to 15
Range of values	SFCs 2, 3 and 4: 0 to 32767 hours SFC 101: 0 to 2^31 - 1 hours
 Granularity 	1 h
retentive	Yes
Clock synchronization	
supported	Yes
• to MPI, master	Yes
• on MPI, device	Yes
• to DP, master	Yes
• on DP, device	Yes
• in AS, master	Yes
• in AS, device	Yes
• on Ethernet via NTP	No; Via CP
• to IF 964 DP	No
Time difference in system when synchronizing via	000
MPI, max.	200 ms
Interfaces	O. O. archite ad M.D.I. / D.D.O.F.D.I.O. D.D D.D.O.F.D.I.O. D.D.
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Optical interface	No
1. Interface	MPI/PROFIBUS DP
Interface type	IVIF I/F NOFIDOS DF
Isolated	Yes
Isolated	Yes
Interface types	
Interface types • RS 485	Yes
Interface types RS 485 Output current of the interface, max.	
Interface types • RS 485 • Output current of the interface, max. Protocols	Yes 150 mA
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI	Yes 150 mA
Interface types • RS 485 • Output current of the interface, max. Protocols	Yes 150 mA
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master	Yes 150 mA Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device	Yes 150 mA Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max.	Yes 150 mA Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication	Yes 150 mA Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP device MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication	Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max.	Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max.	Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max. Transmission rate, max. max. number of DP devices	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max. Transmission rate, max. max. number of DP devices Services	Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max. Transmission rate, max. max. number of DP devices Services PG/OP communication	Yes 150 mA Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP device MPI Number of connections Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Number of connections, max. Transmission rate, max. max. number of DP devices Services	Yes Yes Yes Yes 44; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y

	Voc
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes
— SYNC/FREEZE	Yes
activation/deactivation of DP devices	Yes
Direct data exchange (slave-to-slave communication)	Yes
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP device	044 h. t.
— user data per DP device, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
1st interface / PROFIBUS DP device / header	
Number of connections	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
 Transmission rate, max. 	12 Mbit/s
automatic baud rate search	No
 Address area, max. 	32; Virtual slots
 User data per address area, max. 	32 byte
— of which consistent, max.	32 byte
Services	
— PG/OP communication	Yes; with interface active
— Routing	Yes; with interface active
 Global data communication 	No
 S7 basic communication 	No
— S7 communication	Yes
— \$7 communication, as client	Yes
 — S7 communication, as client 	
 S7 communication, as server 	Yes
— S7 communication, as server— Direct data exchange (slave-to-slave	
 — S7 communication, as server — Direct data exchange (slave-to-slave communication) 	Yes No
 — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 	Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory	Yes No
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs	Yes No No 244 byte
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs	Yes No
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface	Yes No No 244 byte 244 byte
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type	Yes No No Po PROFIBUS DP
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated	Yes No No 244 byte 244 byte
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types	Yes No No No 244 byte 244 byte PROFIBUS DP Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max.	Yes No No No 244 byte 244 byte PROFIBUS DP Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA
- S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 Transfer memory - Inputs - Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max.	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max.	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes Yes Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices Services	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes 125
- S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 Transfer memory - Inputs - Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices Services - PG/OP communication	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes 125 Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices Services — PG/OP communication — Routing	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes Yes Yes Yes Yes Yes 725 Yes Yes Yes Yes Yes Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices Services — PG/OP communication — Routing — Global data communication	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes Yes Yes Yes Yes Yes 7es Yes Yes Yes Yes Yes Yes Yes
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs 2. Interface Interface type Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • PROFIBUS DP master • PROFIBUS DP device PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • max. number of DP devices Services — PG/OP communication — Routing	Yes No No No 244 byte 244 byte PROFIBUS DP Yes Yes 150 mA Yes Yes Yes Yes Yes Yes Yes Yes 725 Yes Yes Yes Yes Yes Yes

S7 communication, as client	Yes
— S7 communication, as client	Yes
— S7 communication, as server— Equidistance	Yes
Equidistance Isochronous mode	Yes
— SYNC/FREEZE	Yes
activation/deactivation of DP devices	Yes
Direct data exchange (slave-to-slave)	Yes
communication)	163
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP device	
 user data per DP device, max. 	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
2nd interface / PROFIBUS DP device / header	
 Number of connections 	32
• GSD file	http://support.automation.siemens.com/WW/view/en/113652
• Transmission rate, max.	12 Mbit/s
 Address area, max. 	32
 User data per address area, max. 	32 byte
— of which consistent, max.	32 byte
Services	
— Routing	Yes; with interface active
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
SIMATIC communication	
• S7 routing	Yes
Open IE communication	
• ISO-on-TCP (RFC1006)	Via CP 443-1 and loadable FB
— Data length, max.	1 452 bytes via CP 443-1 Adv.
Web server	A)
• supported	No
Isochronous mode	V.
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 communication functions / header	32 ms
	Voc
PG/OP communication • Number of connectable OPs with message processing	Yes 63; When using Alarm_S/SQ and Alarm_D/DQ
Number of connectable OPs with message processing Number of connectable OPs without message processing	63
Data record routing	Yes
Global data communication	, 55
supported	Yes
Number of GD loops, max.	16
Number of GD packets, transmitter, max.	16
Number of GD packets, receiver, max.	32
Size of GD packets, max.	54 byte
Size of GD packet (of which consistent), max.	1 variable
S7 basic communication	
supported	Yes
User data per job, max.	76 byte
User data per job (of which consistent), max.	1 variable
(oo ooo.o.o.), max.	I Valiable
S7 communication	i variable

	v.
• supported	Yes
• as server	Yes
• as client	Yes
User data per job, max.	64 kbyte
User data per job (of which consistent), max.	462 byte; 1 variable
S5 compatible communication	
• supported	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
User data per job, max.	8 kbyte
User data per job (of which consistent), max.	240 byte
 Number of simultaneous AG-SEND/AG-RECV orders per CPU, max. 	64/64
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
Number of connections	res, via or and loadable re
overall	64
usable for PG communication	63
reserved for PG communication	1
— adjustable for PG communication, max.	0
usable for OP communication	63
reserved for OP communication	1
adjustable for OP communication, max.	0
usable for S7 basic communication	62
reserved for S7 basic communication	0
adjustable for S7 basic communication, max.	0
usable for S7 communication	62
reserved for S7 communication	0
adjustable for S7 communication, max.	0
usable for routing	31
— reserved for routing	0
adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	63; Max. 63 with Alarm_S/SQ and Alarm_D/DQ (OPs); max. 8 with Alarm,
	Alarm_8, Alarm_8P, Notify and Notify_8 (e.g. WinCC)
Symbol-related messages	Yes
SCAN procedure	Yes
Program alarms	Yes
Process diagnostic messages	Yes
simultaneously active Alarm_S blocks, max.	1 000; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ blocks
Alarm 8-blocks	Yes
	100
Number of instances for alarm 8 and S7 communication	4 000
blocks, max.	4 000
blocks, max. ● preset, max.	4 000 600
blocks, max. • preset, max. Process control messages	4 000 600 Yes
blocks, max. ● preset, max.	4 000 600
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37	4 000 600 Yes
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND)	4 000 600 Yes
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages	4 000 600 Yes 32
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max.	4 000 600 Yes 32
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max.	4 000 600 Yes 32 1 024 128
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max.	4 000 600 Yes 32 1 024 128 512
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max.	4 000 600 Yes 32 1 024 128 512
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values	4 000 600 Yes 32 1 024 128 512 1 024
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max.	4 000 600 Yes 32 1 024 128 512 1 024
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max.	4 000 600 Yes 32 1 024 128 512 1 024
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions	4 000 600 Yes 32 1 024 128 512 1 024
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions Status block	4 000 600 Yes 32 1 024 128 512 1 024 1 100 Yes; Up to 2 simultaneously
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions Status block Single step	4 000 600 Yes 32 1 024 128 512 1 024 1 100 Yes; Up to 2 simultaneously Yes
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions Status block Single step Number of breakpoints	4 000 600 Yes 32 1 024 128 512 1 024 1 100 Yes; Up to 2 simultaneously Yes
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions Status block Single step Number of breakpoints Status/control	4 000 600 Yes 32 1 024 128 512 1 024 1 100 Yes; Up to 2 simultaneously Yes 4 Yes; Up to 16 variable tables
blocks, max. • preset, max. Process control messages Number of archives that can log on simultaneously (SFB 37 AR_SEND) Number of messages • overall, max. • in 100 ms grid, max. • in 500 ms grid, max. • in 1000 ms grid, max. Number of additional values • with 100 ms grid, max. • with 500, 1000 ms grid, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable	4 000 600 Yes 32 1 024 128 512 1 024 1 100 Yes; Up to 2 simultaneously Yes 4

Forcing variables * Forcing variables * Forcing variables * Number of variables, max. * S12 * S20 * Author of variables, max. * S12 * S20 * Service data * Can be read out * Ves * Use of variables * Proposed * Can be read out * Ves * CAR approval * CAR approval * CAR approval * CAR approval * Ves * CAR (Internetly CHICK) * Ves * Ves * CAR (Internetly CHICK) * Ves * CAR (Internet	a Foreign	Von
	• Forcing	Yes
Diagrantic buffer Present Yes Yes Present Yes Yes Present Yes Yes Present Yes Yes Yes Present Yes Yes Present Yes Yes Present Yes		
• number of entries, max.		512
Number of entries, max. - equitable - equitable - can be read out Service data - can be read out Service data - can be read out Service data - can be read out Yes Service data - can be read out Yes CSA approval Ves CSA approval Ves CLUs FM approval CALUS FM approval RCM (formerly C-TICK) Ves RCM (formerly C-TICK) Ves RCM (formerly C-TICK) Ves RCM (formerly Cost-R) Ves RCM (formerly Cost-R) Ves - ATEX ATEX II 3G Ex nA IIC 74 GC Ambient conditions Ambient respectate during operation - inin. - o "C configuration / header Configuration / header Configuration / header - STEP 7 Ves - Configuration / header - Configuration / header - STEP 7 - Consignate on consistent data in process image - yelen function (SFC) - system function blocks (SFB) Frogramming language - LAD - FBD - FBD - FBD - FBD - FBD - FBD - FBC - CFC - Yes - CFC - Yes - D_ACT JPP - HGraphs - D_ACT JPP - HGraphs - D_ACT JPP - RD_REC - WR_REC - D_REC - WR_REC - WR_PREC		Van
— protect 120 Service data	·	
— preset 120 Senvice data		
Sence data - can be read out Standards, approvals, certificates CE mark Yes CSA approval UL approval UL approval Ves CUtus FM approval Yes RCM (formerly CTICK) Yes RCM (formerly CTICK) Yes RCM (formerly CTICK) Yes EAC (formerly Gost R) Ves EAC (formerly Gost R) Ves ATEX ATEX ISG Ex nA IIC T4 GC Ambient conditions Ambient temperature during operation • min. • nin. • o "C configuration / header Configuration / programming / header • STEP 7 Ves configuration / programming / header • Nealing (rowls • System functions (SFC) • system functions (SFC) • system function (SeS) • see instruction list Programming ligitague — LAD Yes • STI. • SCI. — CFC — GRAPH — HiGraph® Configuration / programming / number of simultaneously actives SFC / header — D.PSYC, FR — D. ACT, DP — R. R.E. — R.R.E. — S.R.C. — WR, R.E.C — WR, D.D.A.M. — D.P.R.M. — D.P.R.C — WR, R.E.C — WR, P.E.C — WR, P	•	
ean be read out CEMark Ves CEMark Ves UL approval UL approval Pes RCM (formerly C-TICK) KC approval Pes RCM (formerly C-TICK) Ves ATEX (formerly C-TICK) Ves ATEX (formerly C-TICK) Ves ATEX (formerly C-TICK) Ambient temperature during operation • min. • none • min. • none • one		120
Standards, epitrovals, certificates CE mark Ves CSA approval UL approval UL approval CULus Ves CULus Ves CRM (formetry C-TICK) Ves RCM (formetry C-TICK) Ves RCM (formetry C-TICK) Ves EAC (formetry Cost-R) Ves EAC (formetry Cost-R) Ves LAC (formetry Cost-R) Ves ATEX II 3G Ex nA IIC T4 GC Ambient conditions Ambient temperature during operation vinin. v		Von
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CULUS Yes FM approval Yes FM approval Yes FM conformatry C-TICK) Yes FM commercy C-TICK) Yes FM approval FM approv		
FM approval		
RCM (formerly C-TICK)		
KC approval EAC (formerly Gost-R) Yes EAC (formerly Gost-R) Yes Wes ATEX ATEX Antient conditions Ambient conditions Ambient conditions Ambient emperature during operation • min. • max. 60 °C configuration / header Configuration / header • STEP 7 Configuration / programming / header • Command set • Command set • Nesting levels 7 • Access to consistent data in process image • System functions (SFC) • System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — Yes — STL — SCL — CFC — GRAPH — Hidraph® Configuration / programming / number of simultaneously active — DPSYC_FR — D_ACT_DP — RC_ REC — WR_REC — WR_REC — WR_PARM — PARM_MOD — PARM_MOD — WR_OPARM — PARM_MOD — WR_OPARM — DPSYSST — DPSYSST — DPSYSST — DPSYSST — DPSYSST — PC TOPO TO The Simultaneously active — RC SFC 13; per interface — WR_PARM — PARM_MOD — SFC 15; per interface — WR_PARM — PARM_MOD — WR_OPARM — SFC 15; per interface — WR_PARM — DPSWSST — DPSYSST — RC SFC 55; per interface — WR_PARM — PARM_MOD — WR_OPARM — SFC 55; per interface — WR_PARM — PARM_MOD — WR_OPARM — SFC 55; per interface — WR_PARM — DPSWSST — PT_OPOL Configuration / programming / number of simultaneously active — RC SFC 55; per interface — WR_PARM — PARM_MOD — WR_OPARM — SFC 55; per interface — WR_PARM — DPSYSST — PT_OPOL Configuration / programming / number of simultaneously active — RC SFC 55; per interface — WRREC — WRREC — WRREC — SFB 53; per interface, but not more than 32 across all external interfaces Know-how protection • User program protection/password protection Ves Dimonsticus		
EAC (formerly Gost-R) Use in hazardous areas		
■ ATEX		
■ ATEX Ambient conditions Ambient temperature during operation ■ min.		res
Ambient conditions Ambient conditions Ambient temperature during operation • min.		ATEVIL 20 Ev pA IIO TA Co
Ambient temperature during operation • min. • min. • max. • 60 °C configuration / header Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • Access to consistent data in process image • System functions (SFC) • System functions (SFC) • System functions (SFC) • System function blocks (SFB) Programming language - LAD - FBD - STL - SCL - Yes - SCL - Yes - SCL - CFC - GRAPH - HiGraph® - Yes - HiGraph® - Configuration / programming / number of simultaneously active - SFC / header - D_SYC_FR - D_ACT_DP - RD_REC - RS_FC 62; per interface - WR_REC - WR_PARM - PARM MOD - SSYSST - DP_TOPOL - CONGURATION - RSEC -		ATEX II 3G EX NA IIC 14 GC
	·	0.00
Configuration / header Configuration software STEP 7 STEP 7 Configuration / programming / header Command set Nesting levels Access to consistent data in process image System function blocks (SFB) System function blocks (SFB) System function blocks (SFB) Programming language LAD FBD Yes STL SCL Yes SCL Yes CFC GRAPH HiGraph® Configuration / programming / number of simultaneously active DEACT DP REC SFC 12; SFC 51; per interface WR_REC WR_REC WR_REC WR_DARM DEACT DP ROBERD SFC 57; per interface WR_DARM DEACT DP ROBERD SFC 57; per interface WR_DARM DEACT DP ROBERD		
STEP 7 Yes configuration / programming / header • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image Yes System functions (SFC) see instruction list Programming language — LAD Yes — FBD Yes — STL Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Configuration / programming / number of simultaneously active SFC / header — DPSYC_FR 8, SFC 12; per interface — WR_PARM 8, SFC 55; per interface — WR_PARM 9, SFC 15; per interface — WR_PARM 1, SFC 57; per interface — WR_DARM 2; SFC 56; per interface — WR_DARM 2; SFC 57; per interface — WR_DARM 2; SFC 57; per interface — RDSYSST 8 — DP_TOPOL — RDREC 8, SFC 58; per interface — RDSYSST 8 — DP_TOPOL — RDREC 8, SFC 59; per interface — RDREC 8, SFC 57; per interface — RDSYSST 8 — DP_TOPOL — RDREC 8, SFC 58; per interface — RDREC 8, SFC 57; per interface — RDSYSST 8 — DP_TOPOL — RDREC 8, SFC 58; per interface — WRREC 8; SFB 59; per interface, but not more than 32 across all external interfaces Know-how protection • User program protection/password protection Yes Dimensions		60 °C
STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes STL SCL Yes SCL Yes COFC GRAPH HiGraph® Yes configuration / programming / number of simultaneously active FC 9, SFC 11; per interface DPSYC_FR DACT_DP REC REC STC SFC 55; per interface WR_PARM PARM SSC 55; per interface WR_DPARM DPNRM_DG REC RES 55; per interface RES 55; per interface DPNRM_DG RES 55; per interface RES 55; per interface, but not more than 32 across all external interfaces RES 55; per interface, but not more than 32 across all external interfaces RES 55; per interface, but not more than 32 across all external interfaces RES 55; per interface, but not more than 32 across all external interfaces RES 55; per interface, but not more than 32 across all external interfaces		
Command set Nesting levels Nesting levels System functions (SFC) See instruction list Programming language - LAD - FBD - FBD - STL - SCL - CFC - GRAPH - HiGraph® Configuration / programming / number of simultaneously active SFC / 59; per interface - DACT_DP - RD_ REC - WR_PARM - PARM, MOD - WR_DPARM - PARM, MOD - WR_DPARM - PARM, MOD - WR_DTOPCION - RDSYSST - RDSYSST - RDSYSST - RDSEC - RDREC - RDREC - RDREC - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - RDREC - RDREC - RDREC - RDREC - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - WR_REC - RDREC - RDREC - RDREC - RDSYSST - RDREC - RDREC - RDREC - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - RDREC - RDSYSST - RDREC - RDREC - WRREC - RDREC - RDREC - RDREC - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - RDSYSST - RDREC - WRREC - RDREC - WRREC - RDREC - RDREC - WRREC - WRREC - RDREC - WRREC - WRREC - RDREC - WRREC - WRREC - RDREC - WREC - RDREC		
Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes STL SCL SCL Yes SCL GRAPH HiGraph® Configuration / programming / number of simultaneously active SFC / spe interface WR_DARM PARM BSC 57; per interface WR_DPARM PARM SSC 57; per interface WR_DPARM DPNPKM_DG RDSYSST B RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDSYSST RDREC RDREC RDREC RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDREC RDREC RDSYSST RDREC RDREC RDREC RDREC RDREC RDREC RDSYSST RDREC RDREC RDSYSST RDREC RDREC RDREC RDREC RDREC RDREC RDREC RDSYSST RDREC RDSYSST RDREC		Yes
Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) See instruction list Programming language LAD FBD Yes STL SCL Yes SCL Yes CFC GRAPH HiGraph® Yes configuration / programming / number of simultaneously active SFC / header - DPSYC_FR DRAM - PRAM - PRAM - PARM - DPNRM_DG - RDSYSST - RDSYSST - RDFEC - RDFEC - RDFEC - RDSYST - RDFEC - RDFEC - RDSYSST - RDFTC -		
Access to consistent data in process image System functions (SFC) System function blocks (SFB) See instruction list see instruction list Programming language — LAD — FBD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Configuration / programming / number of simultaneously active SFC / header — DPSYC_FR — D_ACT_DP — RD_REC — WR_PARM — PARM_MOD — PARM_MOD — SSC - SS		
• System functions (SFC) • System function blocks (SFB) Programming language - LAD - FBD - FBD - Yes - STL - SCL - CFC - Yes - GRAPH - HIGraph® configuration / programming / number of simultaneously active SFC / header - DPSYC_FR - D_ACT_DP - RD_REC - WR_REC - WR_PARM - PARM_MOD - SFC 56; per interface - WR_DARM - DPNRM_DG - RDSYSST - DP_TOPOL configuration / programming / number of simultaneously active SFC / header - To SSC 1; per interface - WR_REC - WR_PARM - SFC 55; per interface - WR_DARM - DPNRM_DG - RDSYSST - DP_TOPOL - RDSYSST - REC - WRREC - WRREC - SFC 13; per interface - WR_DARM - PARM_DG - RDSYSST - REC - SFC 103; per interface - WR_DARM - RDSYSST - REC - WRREC - WR		
● System function blocks (SFB) Programming language — LAD — FBD — Yes — STL — SCL — Yes — SCL — CFC — GRAPH — HiGraph® Yes — HiGraph® Yes configuration / programming / number of simultaneously active SFC / header — DPSYC_FR — D_ACT_DP — RD_REC — WR_PARM — PARM_MOD — YES — WR_DARM — DPNRM_DG — WR_DPARM — DPNRM_DG — RD_SYST — B — DP_TOPOL configuration / programming / number of simultaneously active SFC / header - DPSYC_S; per interface 8; SFC 59; per interface 9; SFC 59; per interface - WR_DPARM — DPNRM_DG — RD_SYSST — DP_TOPOL configuration / programming / number of simultaneously active SFB / header - RDREC — WRREC — WR_DPARM — PASYSST — B — SSFC 13; per interface 8; SFC 59; per interface 8; SFC 59; per interface 9; SFC 13; per interface - RDSYSST — RDSYSST — RDREC — WRREC — W	·	
Programming language — LAD — FBD — FBD — Yes — STL — SCL — SCL — Yes — CFC — Yes — GRAPH — HIGraph® — Yes configuration / programming / number of simultaneously active SFC / header — DPSYC_FR — D_ACT_DP — 8: SFC 11; per interface — D_ACT_DP — 8: SFC 12; per interface — WR_REC — WR_REC — WR_REC — WR_REC — WR_PARM — PARM_MOD — Yes (SFC 56; per interface — WR_DPARM — DPNRM_DG — WR_DPARM — DPNRM_DG — RDSYSST — DP_TOPOL configuration / programming / number of simultaneously active SFB / header — RDSYSST — DP_TOPOL configuration / programming / number of simultaneously active SFB / header — RDREC — WRREC — WRREC — SSFB 52; per interface, but not more than 32 across all external interfaces Know-how protection • User program protection/password protection Yes Dimensions		
— LAD Yes — FBD Yes — FBD Yes — STL Yes — 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 — D_ACT_DP 8; SFC 59; per interface — WR_REC 8; SFC 59; per interface — WR_PARM 8; SFC 55; per interface — WR_PARM 8; SFC 55; per interface — WR_DPARM 2; SFC 56; per interface — WR_DPARM 2; SFC 56; per interface — WR_DPARM 2; SFC 56; per interface CDPNRM_DG 8; SFC 13; per interface RDSYSST 8 — 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 Know-how protection User program protection/password protection Yes Dimensions		see instruction list
— FBD — STL — SCL — SCL — Yes — CFC — Yes — GRAPH — HiGraph® — Yes — HiGraph® — Yes configuration / programming / number of simultaneously active SFC / header — DPSYC_FR — D_ACT_DP — RD_REC — RD_REC — WR_REC — WR_PARM — PARM — SFC 55; per interface — WR_DPARM — PARM, SFC 55; per interface — WR_DPARM — PARM, SFC 56; per interface — WR_DPARM — WR_DPARM — SFC 56; per interface — WR_DPARM — WR_DPARM — SFC 56; per interface — WR_DPARM — WR_DPARM — SFC 56; per interface — WR_DPARM — W		
- STL - SCL - SCL - Yes - CFC - Yes - GRAPH - HiGraph® - HiGraph® - PPSYC_FR - DPSYC_FR - DPSYC_FR - D_ACT_DP - RD_REC - RD_REC - WR_REC - WR_PARM - PARM_MOD - 1; SFC 55; per interface - WR_DPARM - DPNM_DG - RDSYST - DP_TOPOL - RDSYST - RDSYSST - DP_TOPOL - ROREC - WRREC - ROREC - RDSYST - RDSYSST - RDSYSST - RDSYSST - ROREC - WRREC - WRREC - STC 13; per interface - RDSYSST - RDSYSS		
SCL Yes CFC Yes GRAPH Yes HiGraph® Yes configuration / programming / number of simultaneously active SFC / header DPSYC_FR		
— GRAPH — HiGraph® Yes configuration / programming / number of simultaneously active SFC / header — DPSYC_FR — D_ACT_DP — SFC 12; per interface — RD_REC — WR_REC — WR_PARM — SFC 58; per interface — WR_PARM — PARM_MOD — 1; SFC 57; per interface — WR_DPARM — DPNRM_DG — RDSYSST — DP_TOPOL — RDSYSST — RESPONDE — RDSYEST — RESPONDE — RDREC — WRREC Know-how protection • User program protection/password protection Yes Dimensions		
- 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 - 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 Know-how protection • User program protection/password protection Yes Dimensions		
configuration / programming / number of simultaneously active SFC / header - DPSYC_FR - D_ACT_DP - RS_REC - RD_REC - WR_REC - WR_PARM - PARM SSFC 55; per interface - WR_DPARM - PARM_MOD - 1; SFC 57; per interface - WR_DPARM - DPNRM_DG - RDSYSST - DP_TOPOL - Configuration / programming / number of simultaneously active - RDREC - WRREC - WR_BEC - SSFE 55; per interface - WR_DPARM - SSFC 56; per interface - SSFC 13; per interface - RDSYSST - SSFC 103; per interface - RDSYSST - SSFC 103; per interface - RDREC - SSFE 52; per interface, but not more than 32 across all external interfaces - WRREC		
- DPSYC_FR - D_ACT_DP - RD_REC - RD_REC - WR_REC - WR_PARM - PARM_MOD - WR_DPARM - USE SFC 56; per interface - RDSYSST - DP_TOPOL - RDSYSST - RDF_TOPOL - RDF_C - RDSYSC - WRREC - WRREC - WRREC - WRDPARM - RDREC - RDSYSST - RDS		
- D_ACT_DP - RD_REC - RD_REC - WR_REC - WR_PARM - WR_PARM - PARM_MOD - SFC 57; per interface - WR_DPARM - WR_DPARM - SFC 56; per interface - WR_DPARM - SFC 57; per interface - WR_DPARM - SFC 56; per interface - WR_DPARM - SFC 57; per interface - WR_DPARM - SFC 56; per interface - RDSYSST - DP_TOPOL - SFC 13; per interface - RDSYSST - DP_TOPOL - SFC 103; per interface - SFB / header - RDREC - RDREC - WRREC - WRR		
- RD_REC - WR_REC - WR_PARM - WR_PARM - PARM_MOD - PARM_MOD - SFC 57; per interface - WR_DPARM - SFC 56; per interface - POPNRM_DG - RDSYSST - DP_TOPOL - SFC 103; per interface configuration / programming / number of simultaneously active SFB / header - RDREC - WRREC - WRREC - WRREC - WRREC - WRREC - WRREC - Wes 57; per interface, but not more than 32 across all external interfaces - SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces - Wread SFB 53; per interface, but not more than 32 across all external interfaces		
- WR_REC - WR_PARM - PARM_MOD - PARM_MOD - WR_DPARM - W		
- WR_PARM - PARM_MOD - PARM_MOD - YSFC 57; per interface - WR_DPARM - YSFC 56; per interface - DPNRM_DG - RDSYSST - DP_TOPOL - YSFC 103; per interface configuration / programming / number of simultaneously active SFB / header - RDREC - WRREC - User program protection/password protection Yes - Ves		
— PARM_MOD — WR_DPARM — WR_DPARM — DPNRM_DG — RDSYSST — DP_TOPOL — Configuration / programming / number of simultaneously active SFB / header — RDREC — WRREC — WRREC — WRREC — WRREC — User program protection/password protection 1; SFC 56; per interface 8; SFC 13; per interface 1; SFC 103; per interface 8; SFB 52; per interface, but not more than 32 across all external interfaces 8; SFB 52; per interface, but not more than 32 across all external interfaces Figure 1; SFC 56; per interface 8; SFC 13; per interface 8; SFB 52; per interface, but not more than 32 across all external interfaces Figure 2; SFC 56; per interface 8; SFC 13; per interface 8; SFB 52; per interface, but not more than 32 across all external interfaces Figure 3; SFB 53; per interface, but not more than 32 across all external interfaces Figure 3; SFB 53; per interface, but not more than 32 across all external interfaces Figure 3; SFB 53; per interface, but not more than 32 across all external interfaces Figure 3; SFB 53; per interface, but not more than 32 across all external interfaces Figure 3; SFB 53; per interface, but not more than 32 across all external interfaces		
- WR_DPARM - DPNRM_DG - RDSYSST - DP_TOPOL - RDSYGMING Symbol 1; SFC 103; per interface configuration / programming / number of simultaneously active SFB / header - RDREC - WRREC - WRREC - WRREC - WRREC - Wreat - Viser program protection/password protection • User program protection/password protection Yes Dimensions		
- DPNRM_DG 8; SFC 13; per interface - RDSYSST 8 - 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 ● User program protection/password protection Yes Dimensions		
- RDSYSST 8 - 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 • User program protection/password protection Yes Dimensions		
— DP_TOPOL 1; SFC 103; per interface configuration / programming / number of simultaneously active SFB / header — RDREC — WRREC 8; SFB 52; per interface, but not more than 32 across all external interfaces — WROREC 8; SFB 53; per interface, but not more than 32 across all external interfaces Know-how protection ● User program protection/password protection Yes Dimensions		
configuration / programming / number of simultaneously active SFB / header — RDREC — WRREC — WRREC — S; SFB 52; per interface, but not more than 32 across all external interfaces Know-how protection • User program protection/password protection Yes Dimensions		
 — RDREC — WRREC Know-how protection ● User program protection/password protection Dimensions 8; SFB 52; per interface, but not more than 32 across all external interfaces 8; SFB 53; per interface, but not more than 32 across all external interfaces Yes 		
— 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		
Know-how protection ● User program protection/password protection Yes Dimensions		8; SFB 52; per interface, but not more than 32 across all external interfaces
User program protection/password protection Yes Dimensions	— WRREC	8; SFB 53; per interface, but not more than 32 across all external interfaces
Dimensions	Know-how protection	
	User program protection/password protection	Yes
Width 25 mm	Dimensions	
	Width	25 mm

Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	700 g

last modified: 12/8/2024 🖸