SIEMENS

Data sheet

6ES7417-4HT14-0AB0



******* repair part ******* SIMATIC S7-400H, CPU 417H central processing unit for S7-400H 4 interfaces: 1 MPI/DP, 1 DP and 2 for sync modules 30 MB memory (15 MB data/15 MB program)

Figure similar

General information	
Product type designation	CPU 417H
HW functional status	1
Firmware version	V4.5
Engineering with	
 Programming package 	STEP 7 V5.3 SP2 or higher with HW update
CiR - Configuration in RUN	
CiR synchronization time, basic load	60 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.	1.5 A
from backplane bus 5 V DC, max.	1.8 A
from backplane bus 24 V DC, max.	150 mA; Per DP interface
from interface 5 V DC, max.	90 mA; At each DP interface
Power loss	
Power loss, typ.	6.5 W
Memory	
Type of memory	RAM
Work memory	
integrated	30 Mbyte
integrated (for program)	15 Mbyte
integrated (for data)	15 Mbyte
expandable	No
Load memory	
 expandable FEPROM 	Yes
 expandable FEPROM, max. 	64 Mbyte
integrated RAM, max.	256 kbyte
 expandable RAM 	Yes
expandable RAM, max.	64 Mbyte
Backup	
• present	Yes
with battery	Yes; all data
without battery	No
Battery	
Backup battery	
 Backup current, typ. 	970 μA; Valid up to 40°C
 Backup current, max. 	1 980 μΑ

• Feeding of external backup voltage to CPU 5 V DC to 15 V DC CPU processing times for bit operations, typ. 0.018 0.018 0.018 0.018 µs	
CPU processing times for bit operations, typ. 0.018 μs	
for bit operations, typ. 0.018 μs	
for fixed point arithmetic, typ. 0.018 µs	
for floating point arithmetic, typ. 0.054 µs	
CPU-blocks	
DB	
• Number, max. 8 191; Number range: 1 - 8191	
• Size, max. 64 kbyte	
FB	
• Size, max. 64 kbyte	
FC CAAAA Noordoo oo	
Number, max. 6 144; Number range: 0 - 6143	
Size, max. 64 kbyte	
OB COLUMN ACTION OF THE PROPERTY OF THE PROPER	
• Size, max. 64 kbyte	
Number of time alarm OBs 8	
Number of delay alarm OBs 4	
Number of cyclic interrupt OBs 9	
Number of process alarm OBs	
Nesting depth	
• per priority class 24	
• additional within an error OB 2	
Counters, timers and their retentivity	
S7 counter	
• Number 2 048	
Retentivity	
— adjustable Yes	
— preset Z 0 to Z 7	
Counting range	
— lower limit 0	
— upper limit 999	
IEC counter	
• present Yes	
• Type SFB	
S7 times	
• Number 2 048	
Retentivity	
— adjustable Yes	
— adjustable — preset No times retentive	
Time range	
·	
— upper limit 9 990 s	
IEC timer	
• present Yes	
• Type SFB	
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max. Total working and load memory (with backup battery)	
Flag	
• Size, max. 16 kbyte	
• Retentivity available Yes	
• Retentivity preset MB 0 to MB 15	
• Number of clock memories 8; in 1 memory byte	
Local data	
• adjustable, max. 64 kbyte	
• preset 32 kbyte	
Address area	

I/O address area	
I/O address area	16 kbyte
• Inputs	
Outputs	16 kbyte
Process image	4014-4-
• Inputs, adjustable	16 kbyte
Outputs, adjustable	16 kbyte
• Inputs, default	1 024 byte
Outputs, default	1 024 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 without message processing, 16 with message processing
Multicomputing	No
Interface modules	
 Number of connectable IMs (total), max. 	6
 Number of connectable IM 460s, max. 	6
 Number of connectable IM 463s, max. 	4; Single mode only
Number of DP masters	
• integrated	2
• via CP	10
 Mixed mode IM + CP permitted 	No
Number of operable FMs and CPs (recommended)	
• FM	See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections
• CP, PtP	See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections
PROFIBUS and Ethernet CPs	14; Of which max. 10 CP as DP master
Slots	
• required slots	2
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; Power on
Operating hours counter	
Number	8
Number/Number range	0 to 7
Range of values	0 to 32767 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
- OII DI , GOVICO	100

In AS, fuelice		
Interfaces Services Service	• in AS, master	Yes
MURIT PROVIDED TO RES 488 interfaces		Yes
Interfaces 2		
Number of RS 485 Interfaces		200 ms
Number of other interfaces No		
Interface No		
Interface type		
Interface bype MPUPROFIBUS DP	<u>.</u>	NO
Institute to types		MDI/DDOCIDILO DD
First August		
		Tes
Output current of the interface, max.		Vac
MPT		
		100 111A
		Yes
Number of connections		
Number of connections		
● Transmission rate, max. Services — PC/OP communication — Routing — Global data communication — ST basic communication — ST communication — ST communication — ST communication, as cellent — ST communication, as server — Number of connections, max. — Number of connections, max. — Transmission rate, max. — PG/OP communication — ST communication — PG/OP communication — ST communication, as client — ST communication, as server — Equidistance — SY Communication, as server — Equidistance — SY Communication — ST communication — No — ST communication — ST communication — ST communication — No — ST communica		44
Services		
— Routing Yes — Global data communication No — S7 basic communication Yes — S7 communication, as client Yes — S7 communication, as server Yes — S7 communication, as server Yes PROFIBUS DP master • Number of connections, max. 32 • Transmission rate, max. 12 Mbit/s • max. number of DP devices 32 Services — PG/OP communication — Routing Yes — Solbal data communication No — S7 basic communication No — S7 communication, as client Yes — S7 communication, as client Yes — S7 communication, as server Yes — Equidistance No — SYNO/FREEZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication)		
- Global data communication No - S7 basic communication No - S7 communication No - S7 communication, as server Yes - S8 communication Routing Yes - S8 communication Yes - Routing Yes - Routing Yes - Global data communication No - S7 basic communication No - S7 basic communication No - S7 communication Yes - S7 communication Yes - S7 communication, as client Yes - S7 communication, as server Yes - Equidistance No - S9 No/FREZE No - S9 No - S9 No - S9 No/FREZE No - S9 No - S9 No - S9 No - S9 No/FREZE No - S9 N	— PG/OP communication	Yes
	— Routing	Yes
	•	No
— S7 communication, as client — S7 communication, as server PROFIBUS DP master • Number of connections, max. • Transmission rate, max. • PG/OP communication • Yes • Routing • Rout	 S7 basic communication 	No
— S7 communication, as server Yes PROFIBUS DP master • Number of connections, max. 32 • Transmission rate, max. 12 Mbit/s • max. number of DP devices 32 Services — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication No — S7 communication Yes — S7 communication, as client Yes — S7 communication, as server Yes — Equidistance No — SYNC/FREEZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication) No Address area — Inputs, max. 2 kbyte — User data per DP device, max. 2 kbyte — user data per DP device, max. 244 byte — Inputs, max. 244 byte — Outputs, max. 244 byte — Pres lot, max. 244 byte — per slot, max. 128 byte Interface PROFIBUS DP Isolated <td< td=""><td>— S7 communication</td><td>Yes</td></td<>	— S7 communication	Yes
Number of connections, max. 32 Transmission rate, max. 12 Mbit/s max. number of DP devices 32 Services	 S7 communication, as client 	Yes
 Number of connections, max. 1 Transmission rate, max. 1 Mbit/s max. number of DP devices 32 Services — PG/OP communication — Routing — Clobal data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — SYNC/FREEZE — activation/deactivation of DP devices — Direct data exchange (slave-to-slave communication) Address area — Inputs, max. — Outputs, max. — User data per DP device — user data per DP device, max. — liputs, max. — Cutputs, max. — User data per DP device, max. — Liputs, max. — User data per DP device, max. — Liputs, max. — User data per DP device — user data per DP device — user data per DP device — user data per DP device, max. — Liputs, max. — Per slot, max.	 S7 communication, as server 	Yes
• Transmission rate, max. 12 Mbit/s • max. number of DP devices 32 Services — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication Yes — S7 communication Yes — S7 communication Yes — S7 communication, as client Yes — S7 communication, as server Yes — Equidistance No — SYNC/FREEZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication) Address area — Inputs, max. 2 kbyte — user data per DP device, max. 244 byte — Inputs, max. 244 byte — Inputs, max. 244 byte — Slots, max. 244 byte — Per slot, max. 244 byte — Interface type PROFIBUS DP Isolated Yes ■ RS 485 Yes	PROFIBUS DP master	
● max. number of DP devices 32 Services — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication No — S7 communication, as client Yes — S7 communication, as server Yes — S7 communication, as server Yes — Equidistance No — SYNC/FREEZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication) No Address area — Inputs, max. 2 kbyte — User data per DP device 2 kbyte — user data per DP device, max. 24 byte — user data per DP device, max. 244 byte — Outputs, max. 244 byte — Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 244 2 Interface type PROFIBUS DP Interface types RS 485	 Number of connections, max. 	32
Services PG/OP communication Yes	 Transmission rate, max. 	12 Mbit/s
	 max. number of DP devices 	32
- Routing	Services	
— Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Equidistance — No — SYNC/FREZE — No — activation/deactivation of DP devices — Direct data exchange (slave-to-slave communication) Address area — Inputs, max. — Outputs, max. — Outputs, max. — User data per DP device, max. — User data per DP device, max. — User data per DP device, max. — Unputs, max. — Outputs, max. — User data per DP device, max. — 244 byte — Inputs, max. — Outputs, max. — 244 byte — Inputs, max. — Slots, max. — Per slot, max. — Slots, max. — Per slot, max. — PROFIBUS DP Interface type Interface type ■ RS 485 ▼es	— PG/OP communication	Yes
S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server S8 communication, as server S9 communication, as server S9 communication, as server S9 communication S	— Routing	Yes
— S7 communication Yes — S7 communication, as client Yes — S7 communication, as server Yes — Equidistance No — SYNC/FREZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication) Address area — Inputs, max. 2 kbyte — outputs, max. 2 kbyte User data per DP device — user data per DP device, max. 244 byte — Inputs, max. 244 byte — Outputs, max. 244 byte — Outputs, max. 244 byte — per slot, max. 244 byte — Slots, max. 244 byte — Jiots, max. 244 byte — Slots, max. 244 — per slot, max. 245 — PROFIBUS DP Interface type PROFIBUS DP Isolated Yes Interface types ■ RS 485	 Global data communication 	No
— S7 communication, as client — S7 communication, as server — Equidistance — SYNC/FREZE — Activation/deactivation of DP devices — Direct data exchange (slave-to-slave communication) Address area — Inputs, max. — Outputs, max. — Outputs, max. — User data per DP device — user data per DP device, max. — Inputs, max. — Inputs, max. — User data per DP device, max. — Liputs, max. — User data per DP device, max. — Liputs, max. — User data per DP device, max. — Liputs, max. — Liputs, max. — Portigues, max. — Slots, max. — Per slot, max. — 244 byte — Per slot, max. — 245 byte 2. Interface Interface type PROFIBUS DP Isolated Yes Interface types ■ RS 485 Yes	— S7 basic communication	No
- S7 communication, as server - Equidistance No - SYNC/FREEZE No - activation/deactivation of DP devices No - Direct data exchange (slave-to-slave communication) Address area - Inputs, max Outputs, max. 2 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 byte - per slot, max. 244 - per slot, max. 218 byte 2. Interface Interface type PROFIBUS DP Isolated Yes Interface types • RS 485 Yes	— S7 communication	Yes
— Equidistance No — SYNC/FREEZE No — activation/deactivation of DP devices No — Direct data exchange (slave-to-slave communication) No Address area — Inputs, max. — Outputs, max. 2 kbyte — Outputs, max. 2 kbyte — user data per DP device — user data per DP device, max. — Inputs, max. 244 byte — Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 244 — per slot, max. 128 byte 2. Interface PROFIBUS DP Isolated Yes Interface types PRS 485	 S7 communication, as client 	Yes
- SYNC/FREEZE No - activation/deactivation of DP devices No - Direct data exchange (slave-to-slave communication) Address area - Inputs, max. 2 kbyte - Outputs, max. 2 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 byte - Slots, max. 244 - per slot, max. 128 byte 2. Interface type Interface type Isolated PRS 485 Pres	 S7 communication, as server 	Yes
activation/deactivation of DP devices Direct data exchange (slave-to-slave communication) Address area Inputs, max.	— Equidistance	No
— Direct data exchange (slave-to-slave communication) Address area — Inputs, max. 2 kbyte — Outputs, max. 2 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 byte — per slot, max. 244 — per slot, max. 128 byte 2. Interface Interface type PROFIBUS DP Isolated Yes Interface types ● RS 485 Yes		No
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Address area — Inputs, max. — Outputs, max. 2 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 byte — per slot, max. 244 — per slot, max. 245 Interface type Interface type Interface types ● RS 485 Yes		No
— Inputs, max. 2 kbyte — Outputs, max. 2 kbyte User data per DP device — user data per DP device, max. — Inputs, max. 244 byte — Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 128 byte Interface PROFIBUS DP Isolated Yes Interface types PRS 485 ◆ RS 485 Yes		
User data per DP device - user data per DP device, max. - Inputs, max. 244 byte - Outputs, max. 244 byte - Slots, max. - per slot, max. 128 byte 2. Interface Interface type Interface type Interface types • RS 485 Yes		2 kbyte
User data per DP device - user data per DP device, max. - Inputs, max. - Outputs, max. - Slots, max. - Slots, max. - per slot, max. 128 byte 2. Interface Interface type Interface type PROFIBUS DP Isolated Yes Interface types • RS 485 Yes	•	
— user data per DP device, max. 244 byte — Inputs, max. 244 byte — Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 128 byte 2. Interface PROFIBUS DP Isolated Yes Interface types PRS 485 Yes		
— Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 128 byte 2. Interface PROFIBUS DP Isolated Yes Interface types PRS 485 Yes		244 byte
— Outputs, max. 244 byte — Slots, max. 244 — per slot, max. 128 byte 2. Interface PROFIBUS DP Isolated Yes Interface types PRS 485 Yes	— Inputs, max.	
— per slot, max. 128 byte 2. Interface Interface type PROFIBUS DP Isolated Yes Interface types ● RS 485 Yes	— Outputs, max.	244 byte
2. Interface Interface type Interface type Isolated Interface types • RS 485 Yes	— Slots, max.	244
Interface type PROFIBUS DP Isolated Yes Interface types • RS 485 Yes	— per slot, max.	128 byte
Isolated Yes Interface types ● RS 485 Yes	2. Interface	
Interface types • RS 485 Yes	Interface type	PROFIBUS DP
• RS 485 Yes	Isolated	Yes
	Interface types	
Output current of the interface, max.	• RS 485	Yes
	Output current of the interface, max.	150 mA

Protocols	
PROFIBUS DP master	Yes
PROFIBUS DP device	No
PROFIBUS DP master	1,0
Number of connections, max.	32
Transmission rate, max.	12 Mbit/s
max. number of DP devices	125
Services	120
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
— Equidistance	No
— SYNC/FREEZE	No
Direct data exchange (slave-to-slave)	No
communication)	
Address area	014.4-
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP device	OM but
— user data per DP device, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
3. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-1AB04-0XA0
4. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-1AB04-
	0XA0
communication functions / header	0×A0
communication functions / header PG/OP communication	Ves Yes
communication functions / header PG/OP communication • Number of connectable OPs without message processing	Yes 63
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing	Ves Yes
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication	Yes 63 16
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported	Yes 63
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported S7 basic communication	OXAO Yes 63 16 No
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported S7 basic communication • supported	Yes 63 16
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported S7 basic communication • supported S7 communication	Yes 63 16 No
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported S7 basic communication • supported S7 communication • supported S7 communication • supported	Yes 63 16 No No Yes
communication functions / header PG/OP communication • Number of connectable OPs without message processing • Number of connectable OPs with message processing Global data communication • supported S7 basic communication • supported S7 communication • supported S7 communication • supported sa server	OXAO Yes 63 16 No No Yes Yes
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client	OXAO Yes 63 16 No No Yes Yes Yes Yes
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max.	0XA0 Yes 63 16 No No Yes Yes Yes Yes 64 kbyte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported S7 basic communication supported S7 communication supported as server as client User data per job, max. User data per job (of which consistent), max.	OXAO Yes 63 16 No No Yes Yes Yes Yes
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max.	0XA0 Yes 63 16 No No Yes Yes<
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported	Yes 63 16 No No Yes Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV)
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported user data per job, max.	Yes 63 16 No No Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported user data per job, max. User data per job, max.	Yes 63 16 No No Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported user data per job, max.	Yes 63 16 No No Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job, max. User data per job (of which consistent), max. S6 compatible communication supported User data per job (of which consistent), max.	Yes 63 16 No No Yes Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported S7 basic communication supported S7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job, max. S5 compatible communication supported User data per job (of which consistent), max. S6 compatible communication supported User data per job (of which consistent), max. S7 compatible communication	Yes 63 16 No No Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported S7 basic communication supported S7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. Standard communication (FMS)	Yes 63 16 No No Yes Yes Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 64/64
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported S7 basic communication supported S7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. Standard communication (FMS) supported	Yes 63 16 No No Yes Yes Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 64/64
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. Standard communication (FMS) supported Number of connections	Yes 63 16 No No No Yes Yes Yes 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 64/64 Yes; Via CP and loadable FB
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. S5 compatible communication supported User data per job (of which consistent), max. Standard communication (FMS) supported Number of connections overall	Yes 63 16 No No No Yes Yes Yes 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 64/64 Yes; Via CP and loadable FB
communication functions / header PG/OP communication Number of connectable OPs without message processing Number of connectable OPs with message processing Global data communication supported 7 basic communication supported 7 communication supported as server as client User data per job, max. User data per job (of which consistent), max. 5 compatible communication supported User data per job (of which consistent), max. Standard per job (of which consistent), max. Number of simultaneous AG-SEND/AG-RECV orders per CPU, max. Standard communication (FMS) supported Number of connections overall usable for PG communication	Yes 63 16 No No Yes Yes Yes Yes Yes 64 kbyte 462 byte; 1 variable Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV) 8 kbyte 240 byte 64/64 Yes; Via CP and loadable FB

16.00	
— reserved for OP communication	1
— adjustable for OP communication, max.	0
usable for S7 basic communication	
— reserved for S7 basic communication	0
 adjustable for S7 basic communication, max. 	0
usable for S7 communication	
— reserved for S7 communication	0
 adjustable for S7 communication, max. 	0
 usable for routing 	0
— reserved for routing	0
— adjustable for routing, max.	0
S7 message functions	
Number of login stations for message functions, max.	16
Symbol-related messages	No
Program alarms	Yes
simultaneously active Alarm-S blocks, max.	200
Alarm 8-blocks	Yes
 Number of instances for alarm 8 and S7 communication blocks, max. 	10 000
• preset, max.	1 200
Process control messages	Yes
Number of archives that can log on simultaneously (SFB 37 AR_SEND)	64
Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	4
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
	70
Forcing	
Forcing • Forcing	Yes
• Forcing	Yes Inputs/outputs bit memories distributed I/Os
ForcingForcing, variables	Inputs/outputs, bit memories, distributed I/Os
ForcingForcing, variablesNumber of variables, max.	
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer	Inputs/outputs, bit memories, distributed I/Os 512
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present 	Inputs/outputs, bit memories, distributed I/Os 512 Yes
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC)	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB)	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC)	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB)	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration / header Configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list see instruction list
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. adjustable preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset Configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes
 Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset Configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH 	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list yes sey yes Y
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® configuration / programming / number of simultaneously actives	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list yes sey yes Y
• Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — adjustable — preset configuration / header Configuration / programming / header • 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 — STL — SCL — CFC — GRAPH — HiGraph® configuration / programming / number of simultaneously active — RD_REC	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. — adjustable — preset configuration / header Configuration software STEP 7 configuration / programming / header Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® configuration / programming / number of simultaneously actives	Inputs/outputs, bit memories, distributed I/Os 512 Yes 3 200 Yes 120 Yes see instruction list 8 Yes see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye

— PARM_MOD	1	
— WR_DPARM	2	
— DPNRM_DG	8	
— RDSYSST	8	
— DP_TOPOL	1	
configuration / programming / number of simultaneously active SFB / header		
— RDREC	8	
— WRREC	8	
Know-how protection		
 User program protection/password protection 	Yes	
Dimensions		
Width	50 mm	
Height	290 mm	
Depth	219 mm	
Weights		
Weight, approx.	995 g	

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