SIEMENS

Data sheet

6ES7412-5HK06-0AB0



SIMATIC S7-400H, CPU 412-5H, CENTRAL UNIT FOR S7-400H AND S7-400F/FH, 5 INTERFACES: 1X MPI/DP, 1X DP, 1X PN AND 2 FOR SYNC MODULES 1 MB MEMORY (512 KB DATA/512 KB CODE)

Product type designation	
General information	
Hardware product version	1
Firmware version	V6.0
Engineering with	
Programming package	As of STEP 7 V5.5 SP2 with HF1
CiR - Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	0 μs
Supply voltage	
Rated value (DC)	
• 24 V DC	No; Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	1.6 A
from backplane bus 5 V DC, max.	1.9 A
from backplane bus 24 V DC, max.	150 mA; 150 mA per DP interface
from interface 5 V DC, max.	90 mA; At each DP interface
Power losses	
Power loss, typ.	7.5 W
Memory	
Type of memory	other
Work memory	
Integrated	1 Mbyte

integrated (for program)	512 kbyte
• integrated (for data)	512 kbyte
• expandable	No
Load memory	
• expandable FEPROM	Yes; with Memory Card (FLASH)
expandable FEPROM, max.	64 Mbyte
• integrated RAM, max.	512 kbyte
• expandable RAM	Yes
• expandable RAM, max.	64 Mbyte
Backup	
• present	Yes
with battery	Yes; all data
• without battery	No

Battery	
Backup battery	
Backup current, typ.	180 μA; Valid up to 40°C
 Backup current, max. 	1 000 μΑ
Backup time, max.	Dealt with in the module data manual with the secondary conditions and the factors of influence
 Feeding of external backup voltage to CPU 	5 to 15 VDC

CPU processing times	
for bit operations, typ.	31.25 ns
for word operations, typ.	31.25 ns
for fixed point arithmetic, typ.	31.25 ns
for floating point arithmetic, typ.	62.5 ns

for floating point arithmetic, typ.	62.5 ns
CPU-blocks	
DB	
Number, max.	6 000; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	3 000; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	3 000; Number range: 0 to 7999
• Size, max.	64 kbyte
ОВ	
Number, max.	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	4; OB 10-13
 Number of delay alarm OBs 	4; OB 20-23

 Number of time interrupt OBs 	4; OB 32-35
 Number of process alarm OBs 	4; OB 40-43
Number of DPV1 alarm OBs	3; OB 55-57
 Number of startup OBs 	2; OB 100, 102
 Number of asynchronous error OBs 	9; OB 80-88
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
• per priority class	24
 additional within an error OB 	1
Country times and their veterativity	

Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— can be set	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— can be set	Yes
— lower limit	0
— upper limit	2 047
— preset	No times retentive
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data	

Data areas and their retentivity	
Total retentive data area	Total working and load memory (with backup battery)
Flag	

Number, max.	8 192 byte
Retentivity available	Yes
 Retentivity preset 	MB 0 to MB 15
Number of clock memories	8; in 1 memory byte
Data blocks	
• Number, max.	6 000; Number range: 1 to 16000
• Size, max.	64 kbyte
Local data	
● adjustable, max.	16 kbyte
• preset	8 kbyte
Address area	
I/O address area	
• Inputs	8 kbyte
Outputs	8 kbyte
of which, distributed	
— MPI/DP interface, inputs	2 kbyte
— MPI/DP interface, outputs	2 kbyte
— DP interface, inputs	4 kbyte
— DP interface, outputs	4 kbyte
— PN interface, inputs	8 kbyte
— PN interface, outputs	8 kbyte
Process image	
Inputs, adjustable	8 kbyte
Outputs, adjustable	8 kbyte
• Inputs, default	256 byte
Outputs, default	256 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	65 536
— Inputs, of which central	65 536
Outputs	65 536
Outputs, of which central	65 536
Analog channels	
• Inputs	4 096
— Inputs, of which central	4 096
Outputs	4 096
Outputs, of which central	4 096
Hardware configuration	

A	Expansion devices, max.	21
interface modules • Number of connectable IMs (total), max. • Number of connectable IM 460s, max. • Number of connectable IM 460s, max. • Number of connectable IM 463s, max. • Vixing of connectable IM 463s, max. • Integrated • Vixing CP • Mixed mode IM + CP permitted • Vixing CP • Integrated • Vixing CP • Integrated • Vixing CP • Integrated • Vixing CP • Number of Operable FMs and CPs (recommended) • FM • CP, point-to-point • CP, point-to-point • PROFIBUS and Ethernet CPs • PROFIBUS and Ethernet CPs Slots • Required slots • Required slots • Prequired slots • Deviation per day (buffered), max. • Deviation per day (buffered) max. •	·	
Number of connectable IMs (total), max. Number of connectable IM 460s, max. Number of connectable IM 460s, max. Number of DP masters Integrated Via CP Nixed mode IM + CP permitted No Via interface module No Via CP Number of IO Controllers Integrated Via CP Number of IO Controllers Integrated See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections CP, point-to-point See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections PROFIBUS and Ethernet CPs Nether of day Clock Required slots Required slots See Required slots See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections See manual Automation System S7-400H f	Multicomputing	No
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Number of connectable IM 463s, max. 4; Single mode only Number of DP masters Integrated 2 Via CP 10; CP 443-5 Extended No Integrated 0 Integrated 0 Integrated 0 Integrated 0 Integrated 0 Integrated 0 Integrated 1 Via CP 0 Number of IO Controllers Integrated 1 Via CP 0 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 PROFIBUS and Ethernet CPs 14; Of which max. 10 CP as DP master Slots Integrated 5 Required slots 2 Inter of day Clock Yes Battery-backed and synchronizable Yes Pescultion per day (buffered), max. 17 s; Power off Number of values SFCs 2, 3 and 4; 0 to 32767 hours SFC 101: 0 to 2*31 - 1 hours Proportion in the properties of the proporties of the proporties of the properties of the proporties of the properties of the	Number of connectable IMs (total), max.	6
Number of DP masters Integrated Via CP Mixed mode IM + CP permitted No Via interface module Number of IO Controllers Integrated Via CP Mixed mode IM + CP permitted Via CP Mixed mode IM + CP permitted Via CP Number of IO Controllers Integrated Via CP See manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections CP, point-to-point 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 Image: See Manual Automation System S7-400H fault-tolerant systems. Limited by number of slots and number of connections At your which max. 10 CP as DP master Slots Profit of day Clock Hardware clock (real-time clock) Yes Resolution Deviation per day (buffered), max. Yes Poevarian flours counter Number Number Number Number Number Number Profit of See See See See See See See See See Se	 Number of connectable IM 460s, max. 	6
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Operating hours counter • Number • Number	 Deviation per day (buffered), max. 	1.7 s; Power off
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Clock synchronization • supported • to MPI, master • to MPI, slave • to DP, master Yes • to DP, master	Granularity	1 hour
 supported to MPI, master to MPI, slave to DP, master Yes to DP, master 	• retentive	Yes
 to MPI, master to MPI, slave to DP, master Yes Yes 	Clock synchronization	
 to MPI, slave to DP, master Yes Yes 	• supported	Yes
• to DP, master Yes	• to MPI, master	Yes
	• to MPI, slave	Yes
	• to DP, master	Yes
		Yes

a in AC manday	Yes
• in AS, master	Yes
• in AS, slave	
• on Ethernet via NTP	Yes; As client
Time difference in system when synchronizing via	40 may Via NTD
• Ethernet, max.	10 ms; Via NTP
● MPI, max.	200 ms
Interfaces	
Number of RS 485 interfaces	2
Number of other interfaces	2; Fiber-optic interface
1st interface	
Interface type	Integrated
Physics	RS 485 / PROFIBUS + MPI
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	150 mA
Number of connection resources	MPI: 32, DP: 16
Functionality	
● MPI	Yes
DP master	Yes
• DP slave	No
MPI	
Number of connections	32; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
 Transmission rate, max. 	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
 Global data communication 	No
— S7 basic communication	No
— S7 communication	Yes
 — S7 communication, as client 	Yes
— S7 communication, as server	Yes
DP master	
Number of connections, max.	16; If a diagnostics repeater is used on the line, the number of connection resources on the line is reduced by 1
• Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	32
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
— S7 basic communication	No

— S7 communication	Yes
 S7 communication, as client 	Yes
 S7 communication, as server 	Yes
 Equidistance mode support 	No
— Isochronous mode	No
— SYNC/FREEZE	No
 Activation/deactivation of DP slaves 	No
 Direct data exchange (slave-to-slave communication) 	No
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— User data per DP slave, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
DP slave	
Number of connections	No configuration of CPU as DP slave

PROFINET
Ethernet RJ45
Yes
Yes
2
Yes; Autosensing
Yes
Yes
No
48
Yes
200 ms
50
No
No
Yes
No
No

Open IE communication	Yes
·	No
Web server	No
Point-to-point connection PROFINET IO Controller	NO
	100 Mbit/s
Transmission rate, max. Number of comments to 10 decisions may	
Number of connectable IO devices, max.	256; In redundant mode via both interfaces
Max. number of connectable IO devices for RT	256
— of which in line, max.	256
Shared device	Yes; Single mode only
Prioritized startup	No
 Activation/deactivation of IO Devices 	No
 IO Devices changing during operation (partner ports), supported 	No
 Device replacement without swap medium 	Yes
Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
Updating time	$250~\mu s$ to $512~ms,$ minimum value depends on the number of configured user data and the configured single or redundant mode
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— S7 communication	Yes
— Isochronous mode	No
 Open IE communication 	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
Open IE communication	
Number of connections, max.	46
 Local port numbers used at the system end 	0, 20, 21, 25, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
 Keep-alive function, supported 	Yes
3rd interface	
Interface type	Integrated
Physics	RS 485 / PROFIBUS
Power supply to interface (15 to 30 V DC), max.	150 mA
Number of connection resources	16
Functionality	
DP master	Yes
• DP slave	No
DP master	
Number of connections, max.	16

Transmission rate, min.	9.6 kbit/s
Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	64
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 mode support	No
Isochronous mode	No
— SYNC/FREEZE	No
 Activation/deactivation of DP slaves 	No
 — Direct data exchange (slave-to-slave communication) 	No
— DPV0	Yes
— DPV1	Yes
Address area	
— Inputs, max.	4 kbyte
— Outputs, max.	4 kbyte
User data per DP slave	
— User data per DP slave, max.	244 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
— Slots, max.	244
— per slot, max.	128 byte
4th interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization modules 6ES7960-1AA06-0XA0 or 6ES7960-1AB06-0XA0
5. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization modules 6ES7960-1AA06-0XA0 or 6ES7960-1AB06-0XA0
Isochronous mode	
Isochronous operation (application synchronized up	No
to terminal)	No
equidistance	No
Communication functions	

PG/OP communication	Yes
Number of connectable OPs without message	47
processing	
Number of connectable OPs with message	47; When using Alarm_S/SQ and Alarm_D/DQ
processing	
Data record routing	Yes
S7 routing	Yes
Global data communication	
• supported	No
S7 basic communication	
• supported	No
S7 communication	
• supported	Yes
• as server	Yes
As client	Yes
 User data per job, max. 	64 kbyte
 User data per job (of which consistent), max. 	462 byte; 1 variable
S5-compatible communication	
• supported	Yes; (via CP max. 10 and FC AG_SEND and FC AG_RECV)
• User data per job, max.	8 kbyte
• User data per job (of which consistent), max.	240 byte
Number of simultaneous AG-SEND/AG-RECV	64/64
orders per CPU, max.	
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	46
— Data length, max.	32 kbyte
 Several passive connections per port, 	Yes
supported	
• ISO-on-TCP (RFC1006)	Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs
 Number of connections, max. 	46
— Data length, max.	32 kbyte; 1452 bytes via CP 443-1 Adv.
• UDP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	46
— Data length, max.	1 472 byte
Web server	
• supported	No
Number of connections	
	48
overall	40
Standard communication (FMS) • supported Open IE communication • TCP/IP — Number of connections, max. — Data length, max. — Several passive connections per port, supported • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. Web server • supported Number of connections	Yes; via integrated PROFINET interface and loadable FBs 46 32 kbyte Yes Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs 46 32 kbyte; 1452 bytes via CP 443-1 Adv. Yes; via integrated PROFINET interface and loadable FBs 46 1 472 byte

 reserved for PG communication 	1
 Adjustable for PG communication, max. 	0
 usable for OP communication 	
 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, 	0
max.	
 usable for S7 communication 	
 reserved for S7 communication 	0
 Adjustable for S7 communication, max. 	0
• usable for routing	
 Reserved for routing 	0
adjustable for routing, max.	0

S7 message functions	
Number of login stations for message functions, max.	47; Max. 47 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	No
SCAN procedure	No
Block related messages	Yes
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	250; Simultaneously active alarm_S/SQ blocks or alarm_D/DQ
	blocks
Alarm 8-blocks	Yes
 Number of instances for alarm 8 and S7 	600
communication blocks, max.	
• preset, max.	300
Process control messages	Yes
Number of archives that can log on simultaneously	16
(SFB 37 AR_SEND)	

Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	16
Status/control	
Status/control variable	Yes; Up to 16 variable tables
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
 Number of variables, max. 	70
Forcing	
• Forcing	Yes

Number of variables, max. Diagnostic buffer	Force, variables	Inputs/outputs, bit memories, distributed I/Os
	Number of variables, max.	256
Number of entries, max. — can be set — preset — preset 3 200 Service data • Can be read out Yes EMC Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • STEP 7 Yes programming • Command set • Nesting levels • Nesting levels • Access to consistent data in process image • System functions (SFC) • System functions (SFB) Forgramming language — LAD — FBD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Number of simultaneously active SFCs — RD REC — WR_REC — WR_REC — WR_PARM — PARM MOD — WR DPARM — DPNRM_DG See instruction 120 3 200 Yes No 3 200 Yes No 3 200 Yes No 120	Diagnostic buffer	
— can be set — preset 120 Service data	• present	Yes
— preset 120 Service data	 Number of entries, max. 	3 200
Service data	— can be set	Yes
Configuration Configuration Command set No System function blocks (SFB) Programming language — LAD — FBD — STL — STL — SCL — CFC — GRAPH — HiGraph® Number of simultaneously active SFCs — RD REC — WR REC — WR PARM — PARM — PARM_MOD — WR DPARM — DPNRM_DG Ves Yes Yes Yes Yes Yes Yes Ye	— preset	120
Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Configuration Configuration software • STEP 7 Programming • 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 — CFC — GRAPH — HiGraph® — Yes Number of simultaneously active SFCs — RD_REC — WR_REC — WR_PARM — PARM_MOD — WR_DPARM — PARM_MOD — WR_DPARM — PARM_DG — WR_DPARM — DPNRM_DG * Yes Yes No **Configuration areas *Yes **See instruction list **Yes **See instruction list **See instruction list **See instruction list **See ins	Service data	
Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas No Configuration Configuration software • STEP 7 Yes programming • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image System functions (SFC) see instruction list • System function blocks (SFB) see instruction list Programming language — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — CFC Yes — GRAPH Yes Number of simultaneously active SFCS — RD_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM — PARM_MOD 1 — WR_DPARM — DPNRM_DG 8	Can be read out	Yes
Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas No Configuration Configuration software • STEP 7 Yes programming • Command set see instruction list • Nesting levels 7 • Access to consistent data in process image System functions (SFC) see instruction list • System function blocks (SFB) see instruction list Programming language — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — CFC Yes — GRAPH Yes Number of simultaneously active SFCS — RD_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM — PARM_MOD 1 — WR_DPARM — DPNRM_DG 8	FMC	
Limit class B, for use in residential areas Configuration Configuration software STEP 7 Yes programming 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 CFC GRAPH HiGraph® Ves Number of simultaneously active SFCs RD_REC WR_REC WR_PARM PARM_MOD Wes Pres Ves STE Yes RES Wes RES RES RES RES RES RES RES RE		
Configuration Configuration software	Limit class A, for use in industrial areas	Yes
Configuration software Yes ● STEP 7 Yes programming See instruction list ● Nesting levels 7 ● Access to consistent data in process image Yes ● System functions (SFC) see instruction list ● System function blocks (SFB) see instruction list Programming language Yes — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	• Limit class B, for use in residential areas	No
Configuration software Yes ● STEP 7 Yes programming See instruction list ● Nesting levels 7 ● Access to consistent data in process image Yes ● System functions (SFC) see instruction list ● System function blocks (SFB) see instruction list Programming language Yes — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		
◆ STEP 7 Yes programming see instruction list ◆ Nesting levels 7 ◆ Access to consistent data in process image Yes ◆ System functions (SFC) see instruction list ◆ System function blocks (SFB) see instruction list Programming language Yes — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		
programming Command set See instruction list Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes STL SCL SCL CFC GRAPH HiGraph® Number of simultaneously active SFCs RD_REC WR_PARM PARM PARM_MOD WR_DPARM PESS See instruction list Yes See instruction list Yes See instruction list Yes See instruction list Yes Yes Yes Yes Yes Yes Yes SCL Yes SCL Yes SCL Wes SEC		Yes
Command set Nesting levels Access to consistent data in process image System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL SCL CFC GRAPH HIGraph® Number of simultaneously active SFCs Number of simultaneously active SFCs PARM_MOD PARM_MOD WR_DPARM PNRM_DG System function list Yes See instruction list Yes see instruction list Yes Yes Yes Yes Yes Yes Yes Y		100
Nesting levels Access to consistent data in process image System functions (SFC) See instruction list System function blocks (SFB) See instruction list Programming language LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH HiGraph® Number of simultaneously active SFCs RD_REC WR_REC WR_PARM PARM_MOD WR_DPARM PDPNRM_DG System function list Yes see instruction list Yes yes instruction list Yes Yes Yes Yes Yes Yes Yes Number of simultaneously active SFCs RD_REC B WR_PARM B PARM_MOD 1 WR_DPARM 2 DPNRM_DG 8 RO SSS SEE INSTRUCTION INSTRUCTIO		see instruction list
Access to consistent data in process image System functions (SFC) System function blocks (SFB) System function blocks (SFB) Programming language LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH Yes HiGraph® Yes Number of simultaneously active SFCS RD_REC WR_REC WR_PARM PARM_MOD PNRM_DG System function list Yes see instruction list Yes yes yes Nee instruction list Yes Yes Yes Yes Yes Yes Yes Yes		
■ System functions (SFC) see instruction list ■ System function blocks (SFB) see instruction list Programming language — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		
● System function blocks (SFB) Programming language — LAD — FBD — FBD — Yes — STL — SCL — CFC — GRAPH — HiGraph® Number of simultaneously active SFCs — RD_REC — WR_REC — WR_PARM — PARM_MOD — WR_DPARM — DPNRM_DG SYes Yes see instruction list Yes Yes Yes Yes Yes Yes 8 8 — PARM_DG 8		
Programming language Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		
— LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		
- STL Yes - SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes Number of simultaneously active SFCs - RD_REC 8 - WR_REC 8 - WR_PARM 8 - PARM_MOD 1 - WR_DPARM 2 - DPNRM_DG 8		Yes
- SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes Number of simultaneously active SFCs - RD_REC 8 - WR_REC 8 - WR_PARM 8 - PARM_MOD 1 - WR_DPARM 2 - DPNRM_DG 8	— FBD	Yes
— CFC Yes — GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— STL	Yes
— GRAPH Yes — HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— SCL	Yes
— HiGraph® Yes Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— CFC	Yes
Number of simultaneously active SFCs — RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— GRAPH	Yes
— RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— HiGraph®	Yes
— RD_REC 8 — WR_REC 8 — WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	Number of simultaneously active SFCs	
— WR_PARM 8 — PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8		8
— PARM_MOD 1 — WR_DPARM 2 — DPNRM_DG 8	— WR_REC	8
— WR_DPARM 2 — DPNRM_DG 8	— WR_PARM	8
— DPNRM_DG 8	— PARM_MOD	1
	— WR_DPARM	2
— RDSYSST 8	— DPNRM_DG	8
	— RDSYSST	8
— DP_TOPOL 1	— DP_TOPOL	1
Number of simultaneously active SFBs	Number of simultaneously active SFBs	
— RDREC 8	— RDREC	8

— WRREC	8
Know-how protection	
 User program protection/password protection 	Yes
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Dimensions	
Width	50 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	995 g
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