SIEMENS

Data sheet

6ES7414-4HJ04-0AB0



*********** Replacement part ********* SIMATIC S7-400H, CPU 414H Central processing unit for S7-400H and S7-400F/FH, 4 interfaces: 1 MPI/DP, 1 DP and 2 for sync modules, 1.4 MB memory (700 KB data/700 KB program)

General information	
Product type designation	CPU 414-4H
Supply voltage	
Rated value (DC)	Power supply via system power supply
Input current	
from backplane bus 5 V DC, typ.	1 800 A
from backplane bus 5 V DC, max.	2 A
Power loss	
Power loss, typ.	4.5 W
Memory	
Type of memory	RAM
Work memory	
integrated (for program)	700 kbyte
integrated (for data)	700 kbyte
expandable	No
Load memory	
 expandable FEPROM 	Yes; with Memory Card (FLASH)
 expandable FEPROM, max. 	64 Mbyte
integrated RAM, max.	256 kbyte
expandable RAM	Yes; with Memory Card (RAM)
expandable RAM, max.	64 Mbyte
Backup	
• present	Yes
with battery	Yes; all data
without battery	No
Battery	
Backup battery	
 Backup current, typ. 	550 μA
 Backup current, max. 	1 530 μΑ
Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	0.06 µs
for word operations, typ.	0.06 µs
for fixed point arithmetic, typ.	0.06 µs
for floating point arithmetic, typ.	0.18 µs
CPU-blocks	
DB	
 Number, max. 	4 095; DB 0 reserved
• Size, max.	64 kbyte
FB	

	0.010
Number, max.	2 048
• Size, max.	64 kbyte
FC	
Number, max.	2 048
• Size, max.	64 kbyte
OB	
Number, max.	see instruction list
• Size, max.	64 kbyte
Nesting depth	
per priority class	24
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
	2 047
— upper limit — preset	Z 0 to Z 7
	201027
Counting range	0
— lower limit	0
— upper limit	999
IEC counter	· ·
• present	Yes
• Type	SFB
S7 times	
Number	2 048
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Data areas and their retentivity	
Flag	
• Size, max.	8 kbyte
Retentivity available	Yes; From MB 0 to MB 8 191
Retentivity preset	MB 0 to MB 15
Address area	
I/O address area	
• Inputs	8 kbyte
• Outputs	8 kbyte
Process image	o rayto
	0 libito
 Inputs, adjustable 	
- Outputo adjustable	8 kbyte
Outputs, adjustable	8 kbyte
 Inputs, default 	8 kbyte 1 024 byte
Inputs, defaultOutputs, default	8 kbyte
Inputs, default Outputs, default Subprocess images	8 kbyte 1 024 byte 1 024 byte
 Inputs, default Outputs, default Subprocess images Number of subprocess images, max. 	8 kbyte 1 024 byte
 Inputs, default Outputs, default Subprocess images Number of subprocess images, max. Digital channels 	8 kbyte 1 024 byte 1 024 byte 8
 Inputs, default Outputs, default Subprocess images Number of subprocess images, max. Digital channels Inputs 	8 kbyte 1 024 byte 1 024 byte 8 65 536
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Multicomputing	No
Interface modules	110
Number of connectable IMs (total), max.	6
 Number of connectable IM 460s, max. 	6
Number of connectable IM 463s, max. Number of DD graphers.	6; IM 463-2
Number of DP masters	
• integrated	2
• via CP	10
• via IM 467	0
Mixed mode IM + CP permitted	No; IM 467 cannot be used jointly with CP 443-5 Ext.
via interface module	0
Number of operable FMs and CPs (recommended)	
• FM	32; Limited by number of slots and number of connections
• CP, PtP	32; Limited by number of slots and number of connections
• CP, LAN	32; Limited by number of slots and number of connections
Slots	
required slots	2
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Operating hours counter	
Number	8
Clock synchronization	
• supported	Yes
1. Interface	
Interface type	MPI/PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
Protocols	
• MPI	Yes; Default setting
PROFIBUS DP master	Yes
PROFIBUS DP slave	No
MPI	
Number of connections	32
Transmission rate, max.	12 Mbit/s
Services	12 Mibito
— PG/OP communication	Yes
Global data communication	No
Global data communication S7 basic communication	No
— S7 basic communication — S7 communication	
	Yes
— S7 communication, as client	Yes
— S7 communication, as server	Yes
PROFIBUS DP master	00
Number of connections, max.	32
Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	
	32; Number of slots, max. 512
Services	
	32; Number of slots, max. 512 Yes
Services	
Services — PG/OP communication	Yes
Services — PG/OP communication — Global data communication	Yes No
Services — PG/OP communication — Global data communication — S7 basic communication	Yes No No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication	Yes No No No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client	Yes No No No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server	Yes No No No No No No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance	Yes No No No No No No No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — SYNC/FREEZE	Yes No
Services — PG/OP communication — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — SYNC/FREEZE — Activation/deactivation of DP slaves	Yes No

leave easy	Olihuda
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	244 h. 4a
— Inputs, max. — Outputs, max.	244 byte
•	244 byte 244
— Slots, max.	
— per slot, max. 2. Interface	128 byte
	DDOCIDLIC DD
Interface type Isolated	PROFIBUS DP
	Yes
Interface types	Voo
• RS 485	Yes
Protocols - PROFIBLIS DR moster	Voc. Default actting
PROFIBUS DP master PROFIBUS DP clave	Yes; Default setting
PROFIBUS DP slave Point to point composition	No No
Point-to-point connection	No
PROFIBUS DP master	40
Number of connections, max. Transmission rate, max.	16
Transmission rate, max. Number of DR aloves, max.	12 Mbit/s
Number of DP slaves, max. Sandage	96
Services	Von
— PG/OP communication	Yes
— Global data communication	No No
— S7 basic communication	No
— S7 communication	No
— S7 communication, as client	No
— S7 communication, as server	No
— Equidistance	No .
— SYNC/FREEZE	No
Activation/deactivation of DP slaves	No
 Direct data exchange (slave-to-slave communication) 	No
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
Protocols	2112)10
SIMATIC communication	
• S7 routing	Yes
communication functions / header	
PG/OP communication	Yes
Global data communication	100
supported	No
S7 basic communication	NO
communication function / S7 basic communication	No
S7 communication	110
supported	Yes
as server	Yes
as client	Yes
User data per job, max.	64 kbyte
S5 compatible communication	OT NOYIO
supported	Yes; via CP and loadable FC
	8 kbyte
User data per job, max. Standard communication (FMS)	O KDyte
	Ves: Via CP and loadable ER
Supported User data per job, may	Yes; Via CP and loadable FB
User data per job, max. Number of connections	Dependent on CP
overall	32
usable for PG communication	J2
■ usable for FG confinitionication	

- reserved for PG communication	recented for DC communication	4
- reserved for OP communication, max. - adjustable for S7 basic communication, max. - usable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication, max. - usable for routing - reserved for routing - adjustable for routing, max. - adjustable for routing, max. - adjustable for routing, max. Number of login stations for message functions, max. Number of login stations for message functions		U .
- adjustable for OP communication, max. • usable for S7 basic communication - reserved for S7 basic communication, max. • usable for roviting - adjustable for roviting - reserved for roviting - adjustable for routing - adjustable for routing, max. 0 S7 message functions Number of login stations for message functions, max. 8 Test commissioning functions Diagnostic buffer • present • Number of entries, max. - adjustable - preset 120 configuration / heador Configuration / programming / header Programming language - LAD - FBD - STL - SCL - SCL - CFC - GRAPH - HiGraph® Know-how protection - User program protection/password protection - User program protection/password protection Vesights Width Height - 290 mm Volights		
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Diagnostic buffer		8
	Test commissioning functions	
Number of entries, max.	Diagnostic buffer	
adjustable	• present	Yes
— preset 120 configuration / header Configuration software	 Number of entries, max. 	3 200
configuration / header ● STEP 7 Yes; V5.0 SP2 configuration / programming / header Programming language — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes • User program protection/password protection Yes Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights Ves. Os P2 Viscout Programming / header Pes Yes Pes Weights Pes	— adjustable	Yes
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— LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes User program protection/password protection Yes Dimensions Yes Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software	Yes; V5.0 SP2
— FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes User program protection/password protection Yes Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights Weights	Configuration software • STEP 7	Yes; V5.0 SP2
— STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes Know-how protection Yes Dimensions Yes Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header	Yes; V5.0 SP2
- SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes Know-how protection • User program protection/password protection Yes Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header Programming language	
CFC Yes GRAPH Yes HiGraph® Yes Know-how protection ■ User program protection/password protection Yes Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header Programming language — LAD	Yes
— GRAPH — HiGraph® Yes Know-how protection	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD	Yes Yes
— HiGraph® Know-how protection	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD — STL	Yes Yes Yes
Know-how protection • User program protection/password protection Pimensions Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL	Yes Yes Yes Yes
● User program protection/password protection Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC	Yes Yes Yes Yes Yes Yes
Dimensions Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software ◆ STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH	Yes Yes Yes Yes Yes Yes Yes Yes
Width 50 mm Height 290 mm Depth 219 mm Weights	Configuration software ● STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®	Yes Yes Yes Yes Yes Yes Yes Yes
Height 290 mm Depth 219 mm Weights	Configuration software ● STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection	Yes Yes Yes Yes Yes Yes Yes Yes Yes
Depth 219 mm Weights	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection	Yes Yes Yes Yes Yes Yes Yes Yes Yes
Weights	Configuration software ● STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection ● User program protection/password protection Dimensions	Yes Yes Yes Yes Yes Yes Yes Yes Yes
	Configuration software • STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection Dimensions Width	Yes
Weight, approx. 1 070 g	Configuration software STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection Dimensions Width Height	Yes
	Configuration software STEP 7 configuration / programming / header Programming language — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph® Know-how protection • User program protection/password protection Dimensions Width Height Depth	Yes

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9/11/2023