SIEMENS

Data sheet

6ES7417-4HT14-0AB0



*********** Replacement 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
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

Packup current may	1 980 μΑ
Backup current, max.Backup time, max.	Dealt with in the module data manual with the secondary conditions and
Backup unic, max.	the factors of influence
 Feeding of external backup voltage to CPU 	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	0.018 μs
for word 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	
Number, max.	6 144; Number range: 0 - 6143
• Size, max.	64 kbyte
FC	
Number, max.	6 144; Number range: 0 - 6143
• Size, max.	64 kbyte
OB	
• 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	8
Nesting depth	0.4
• per priority class	24
additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	V
— adjustable	Yes
— lower limit	0
— upper limit	2 047
preset Counting range	Z 0 to Z 7
— lower limit	0
— upper limit	999
IEC counter	555
• present	Yes
• Type	SFB
S7 times	5.5
• Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	No times retentive
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
	Yes
present	
presentType	SFB
	SFB
• Type	SFB Total working and load memory (with backup battery)

• 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	
Inputs	16 kbyte
Outputs	16 kbyte
Process image	
 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	INO
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	2
integratedvia CP	
	10 No.
Mixed mode IM + CP permitted Number of energible FMs and CPs (recommended)	No
Number of operable FMs and CPs (recommended)	Con manual Automation Contain C7 40011 fault tolorest contains
• 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.
50,,, 0	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	
	Yes
 Hardware clock (real-time) 	
Hardware clock (real-time) retentive and synchronizable	Yes
• retentive and synchronizable	Yes
retentive and synchronizableResolution	1 ms
• retentive and synchronizable	

- Niverkov	0
• Number	8
Number/Number range	0 to 7
Range of values	0 to 32767 hours
Granularity	1 h
• retentive	Yes
Clock synchronization	Yes
supportedto MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
Time difference in system when synchronizing via	165
MPI, max.	200 ms
Interfaces	200 1110
Number of RS 485 interfaces	2
Number of other interfaces	0
Optical interface	No
1. Interface	110
	MDI/DDOCIDLIC DD
Interface type	MPI/PROFIBUS DP
Isolated Interface types	Yes
Interface types	Voc
RS 485 Output current of the interface, may	Yes 150 mA
Output current of the interface, max. Protocols	150 IIIA
MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	No
MPI	INO
Number of connections	44
Transmission rate, max.	12 Mbit/s
Services	12 IVIDIUS
— 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
PROFIBUS DP master	
Number of connections, max.	32
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	32
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
	No
 — S7 basic communication 	
S7 basic communicationS7 communication	Yes
— S7 communication	Yes Yes
— S7 communication— S7 communication, as client	
S7 communicationS7 communication, as clientS7 communication, as server	Yes
— S7 communication— S7 communication, as client	Yes Yes
S7 communicationS7 communication, as clientS7 communication, as serverEquidistance	Yes Yes No
 S7 communication S7 communication, as client S7 communication, as server Equidistance SYNC/FREEZE Activation/deactivation of DP slaves 	Yes Yes No No
 S7 communication S7 communication, as client S7 communication, as server Equidistance SYNC/FREEZE 	Yes Yes No No

lanceta many	O librato
— 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
2. Interface	
Interface type	PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	150 mA
Protocols	
PROFIBUS DP master	Yes
PROFIBUS DP slave	No
PROFIBUS DP master	
Number of connections, max.	32
Transmission rate, max. Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	125
Services	123
— 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	
— Inputs, max.	8 kbyte
— Outputs, max.	8 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
3. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-
	1ÅB04-0XA0
4. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization submodule IF 960 6ES7960-1AA04-0XA0 or 6ES7960-
	1ÅB04-0XA0
Communication functions	
PG/OP communication	Yes
 Number of connectable OPs without message 	63
processing	
 Number of connectable OPs with message 	16
processing	
Global data communication	
• supported	No
S7 basic communication	
• supported	No
S7 communication	

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37 AR_SEND) Test commissioning functions Status block Yes Single step Number of breakpoints 4 Status/control • Status/control variable • Variables • Number of variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. 512 Diagnostic buffer • present • Number of entries, max. — adjustable — preset 120		Yes
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Configuration		120
	Configuration	

Configuration software		
• STEP 7	Yes	
Programming		
 Command set 	see instruction list	
 Nesting levels 	8	
 Access to consistent data in process image 	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	
— RDSYSST	8	
— DP_TOPOL	1	
Number of simultaneously active SFBs		
— 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	

3/25/2021

last modified: