



***** 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 20 MB memory (10 MB data/10 MB program)

General information	
Product type designation	CPU 417H
Supply voltage	
Rated value (DC)	Power supply via system power supply
Input current	
from backplane bus 5 V DC, max.	1.7 A
Power loss	
Power loss, typ.	6 W
Storage	
Type of memory	RAM
Work memory	
• integrated	20 Mbyte
• expandable	No
Load memory	
• expandable FEPRM	Yes; with Memory Card (FLASH)
• expandable FEPRM, 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.	600 µA
• Backup current, max.	1 810 µA
• Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	0.03 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.03 µs
for floating point arithmetic, typ.	0.09 µs
CPU-blocks	
DB	
• Number, max.	8 192; DB 0 reserved
• Size, max.	64 kbyte
FB	
• Number, max.	6 144

• Size, max.	64 kbyte
FC	
• Number, max.	6 144
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
Nesting depth	
• per priority class	24
• additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— can be set	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	1
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
S7 timer	
• 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.	16 kbyte
• Retentivity available	Yes; MB 0 to MB 16383
• Retentivity preset	MB 0 to MB 15
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
Subprocess images	
• Number of subprocess images, max.	8
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
Multicomputing	No

Interface modules	
• Number of connectable IMs (total), max.	6
• Number of connectable IM 460s, max.	6
• Number of connectable IM 463s, max.	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	64; Limited by number of slots and number of connections
• CP, PtP	64; Limited by number of slots and number of connections
• CP, LAN	64; 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 device	No
MPI	
• Number of connections	44
• Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	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
• max. number of DP devices	32; Number of slots, max. 512
Services	
— PG/OP communication	Yes
— Global data communication	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 devices	No
— Direct data exchange (slave-to-slave communication)	No

Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP device	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
2. Interface	
Interface type	PROFIBUS DP
Isolated	Yes
Interface types	
• RS 485	Yes
Protocols	
• PROFIBUS DP master	Yes
• PROFIBUS DP device	No
• Point-to-point connection	No
PROFIBUS DP master	
• Number of connections, max.	32
• Transmission rate, max.	12 Mbit/s
• max. number of DP devices	125; Number of slots, max. 2 048
Services	
— PG/OP communication	Yes
— Global data communication	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 devices	No
— Direct data exchange (slave-to-slave communication)	No
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP device	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
Communication functions	
PG/OP communication	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
S5 compatible communication	
• supported	Yes; via CP and loadable FC
• User data per job, max.	8 kbyte
Standard communication (FMS)	
• supported	Yes; Via CP and loadable FB
• User data per job, max.	Dependent on CP
Number of connections	
• overall	64
• usable for PG communication	
— reserved for PG communication	1
— adjustable for PG communication, max.	0

• usable for OP communication — reserved for OP communication — adjustable for OP 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.	1 0 0 0 0 0																																										
S7 message functions																																											
Number of login stations for message functions, max.	16																																										
Configuration																																											
Configuration software																																											
• STEP 7	Yes; V5.0 SP2																																										
Programming																																											
Programming language																																											
— LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®	Yes Yes Yes Yes Yes Yes Yes																																										
Know-how protection																																											
• User program protection/password protection	Yes																																										
Dimensions																																											
Width	50 mm																																										
Height	290 mm																																										
Depth	219 mm																																										
Weights																																											
Weight, approx.	1 070 g																																										
Classifications																																											
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FM



For use in hazardous locations

Functional Safety

Maritime application

[Type Examination Certificate](#)



[Type Examination Certificate](#)



Maritime application



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