



\*\*\*\*\* 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
Memory	
Type of memory	RAM
Work memory	
<ul style="list-style-type: none"> <li>integrated</li> <li>expandable</li> </ul>	20 Mbyte No
Load memory	
<ul style="list-style-type: none"> <li>expandable FEPRM</li> <li>expandable FEPRM, max.</li> <li>integrated RAM, max.</li> <li>expandable RAM</li> <li>expandable RAM, max.</li> </ul>	Yes; with Memory Card (FLASH) 64 Mbyte 256 kbyte Yes; with Memory Card (RAM) 64 Mbyte
Backup	
<ul style="list-style-type: none"> <li>present</li> <li>with battery</li> <li>without battery</li> </ul>	Yes Yes; all data No
Battery	
Backup battery	
<ul style="list-style-type: none"> <li>Backup current, typ.</li> <li>Backup current, max.</li> <li>Feeding of external backup voltage to CPU</li> </ul>	600 $\mu$ A 1 810 $\mu$ A 5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	0.03 $\mu$ s
for word operations, typ.	0.03 $\mu$ s
for fixed point arithmetic, typ.	0.03 $\mu$ s
for floating point arithmetic, typ.	0.09 $\mu$ s
CPU-blocks	
DB	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> </ul>	8 192; DB 0 reserved 64 kbyte
FB	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> </ul>	6 144 64 kbyte

<b>FC</b>	
• Number, max.	6 144
• Size, max.	64 kbyte
<b>OB</b>	
• Number, max.	see instruction list
• Size, max.	64 kbyte
<b>Nesting depth</b>	
• per priority class	24
• additional within an error OB	2
<b>Counters, timers and their retentivity</b>	
<b>S7 counter</b>	
• Number	2 048
<b>Retentivity</b>	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
<b>Counting range</b>	
— lower limit	1
— upper limit	999
<b>IEC counter</b>	
• present	Yes
• Type	SFB
<b>S7 times</b>	
• Number	2 048
<b>Time range</b>	
— lower limit	10 ms
— upper limit	9 990 s
<b>IEC timer</b>	
• present	Yes
• Type	SFB
<b>Data areas and their retentivity</b>	
<b>Flag</b>	
• Size, max.	16 kbyte
• Retentivity available	Yes; MB 0 to MB 16383
• Retentivity preset	MB 0 to MB 15
<b>Address area</b>	
<b>I/O address area</b>	
• Inputs	16 kbyte
• Outputs	16 kbyte
<b>Process image</b>	
• Inputs, adjustable	16 kbyte
• Outputs, adjustable	16 kbyte
• Inputs, default	1 024 byte
• Outputs, default	1 024 byte
<b>Subprocess images</b>	
• Number of subprocess images, max.	8
<b>Digital channels</b>	
• Inputs	131 072
— of which central	131 072
• Outputs	131 072
— of which central	131 072
<b>Analog channels</b>	
• Inputs	8 192
— of which central	8 192
• Outputs	8 192
— of which central	8 192
<b>Hardware configuration</b>	
Number of expansion units, max.	21
Multicomputing	No
<b>Interface modules</b>	
• Number of connectable IMs (total), max.	6
• Number of connectable IM 460s, max.	6

• Number of connectable IM 463s, max.	6; IM 463-2
<b>Number of DP masters</b>	
• 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
<b>Number of operable FMs and CPs (recommended)</b>	
• 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
<b>Slots</b>	
• required slots	2
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
• retentive and synchronizable	Yes
<b>Operating hours counter</b>	
• Number	8
<b>Clock synchronization</b>	
• supported	Yes
<b>1. Interface</b>	
Interface type	MPI/PROFIBUS DP
Isolated	Yes
<b>Interface types</b>	
• RS 485	Yes
<b>Protocols</b>	
• MPI	Yes; Default setting
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	No
<b>MPI</b>	
• Number of connections	44
• Transmission rate, max.	12 Mbit/s
<b>Services</b>	
— 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
<b>PROFIBUS DP master</b>	
• Number of connections, max.	32
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	32; Number of slots, max. 512
<b>Services</b>	
— 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 slaves	No
— Direct data exchange (slave-to-slave communication)	No
<b>Address area</b>	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
<b>User data per DP slave</b>	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
<b>2. Interface</b>	

Interface type	PROFIBUS DP
Isolated	Yes
<b>Interface types</b>	
• RS 485	Yes
<b>Protocols</b>	
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	No
• Point-to-point connection	No
<b>PROFIBUS DP master</b>	
• Number of connections, max.	32
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	125; Number of slots, max. 2 048
<b>Services</b>	
— 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 slaves	No
— Direct data exchange (slave-to-slave communication)	No
<b>Address area</b>	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
<b>User data per DP slave</b>	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
<b>communication functions / header</b>	
PG/OP communication	Yes
<b>Global data communication</b>	
• supported	No
<b>S7 basic communication</b>	
• supported	No
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	64 kbyte
<b>S5 compatible communication</b>	
• supported	Yes; via CP and loadable FC
• User data per job, max.	8 kbyte
<b>Standard communication (FMS)</b>	
• supported	Yes; Via CP and loadable FB
• User data per job, max.	Dependent on CP
<b>Number of connections</b>	
• 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	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 routing	
— reserved for routing	0
— adjustable for routing, max.	0
<b>S7 message functions</b>	
Number of login stations for message functions, max.	16

configuration / header	
Configuration software	
• 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	
• User program protection/password protection	Yes
Dimensions	
Width	50 mm
Height	290 mm
Depth	219 mm
Weights	
Weight, approx.	1 070 g
<b>last modified:</b>	3/2/2021 