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Data sheet 6ES7417-4HL04-0AB0



********** 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 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 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.	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

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● 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

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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

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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

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● 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
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	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

Classifications

	Version	Classification
eClass	16	27-24-22-07
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	10	EC000236
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

China RoHS

General Product Ap-	EMV	For use in hazardous locations

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proval					
Manufacturer Declaration	RCM	RCM	IECEx	ATEX	FM

For use in hazardous locations			Functional Saftey	Maritime application	
IECEx	Type Examination Certificate	ATEX	Type Examination Certificate	BUREAU VERITAS	DNV

Maritime application			
PRS	RINA	RMRS	CCS (China Classification Society)

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