MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7417-4XT05-0AB0

CPU 417-4 CENTRAL PROCESSING UNIT

Used with the applicable SIMATIC S7-400 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens technical documentation for 6ES7417-4XT05-0AB0

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Data sheet 6ES7417-4XT05-0AB0



Figure similar

********** Replacement part ********* SIMATIC S7-400, CPU 417-4 Central processing unit with: work memory 30 MB, (15 MB code; 15 MB data) 1st interface MPI 12 Mbit/s; 2nd interface PROFIBUS DP, 3rd/4th interface plug-in IFM module

General information	
Product type designation	CPU 417-4
HW functional status	04
Firmware version	V5.3
Product function	
● Isochronous mode	Yes; For PROFIBUS only
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	7 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.	600 mA; 150 mA per DP interface
from interface 5 V DC, max.	90 mA; At each DP interface
Power loss	
Power loss, typ.	7.5 W
Power loss, max.	8 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; with Memory Card (FLASH)
● expandable FEPROM, max.	64 Mbyte
● integrated RAM, max.	1 Mbyte
● expandable RAM	Yes; with Memory Card (RAM)
● expandable RAM, max.	64 Mbyte
Backup	
● present	Yes
● with battery	Yes; all data
● without battery	No
Battery	

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Backup battery	
● Backup current, typ.	225 µA; up to 40 °C
● Backup current, max.	750 µA
● Backup time, max.	See reference manual, module data, Chapter 3.3
● Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	18 ns
for word operations, typ.	18 ns
for fixed point arithmetic, typ.	18 ns
for floating point arithmetic, typ.	54 ns
CPU-blocks	
DB	
● Number, max.	16 000; Number range: 1 to 16000
● Size, max.	64 kbyte
FB	
● Number, max.	8 000; Number range: 0 to 7999
● Size, max.	64 kbyte
FC	
● Number, max.	8 000; Number range: 0 to 7999
● Size, max.	64 kbyte
OB	
● Number, max.	see instruction list
● Size, max.	64 kbyte
● Number of free cycle OBs	1; OB 1
● Number of time alarm OBs	8; OB 10-17
● Number of delay alarm OBs	4; OB 20-23
● Number of cyclic interrupt OBs	9; OB 30-38 (shortest cycle that can be set = 500 µs)
● Number of process alarm OBs	8; OB 40-47
● Number of DPV1 alarm OBs	3; OB 55-57
● Number of isochronous mode OBs	4; OB 61-64
● Number of multicomputing OBs	1; OB 60
● Number of background OBs	1; OB 90
● Number of startup OBs	3; OB 100-102
● Number of asynchronous error OBs	9; OB 80-88
● Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
● per priority class	24
● additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
● Number	2 048
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— counting range / of S7 counters / initial value	0
— counting range / of S7 counters / full-scale value	999
IEC counter	
● present	Yes
● Type	SFB
● Number	Unlimited (limited only by RAM capacity)
S7 times	
● Number	2 048
Retentivity	
— adjustable	Yes
— preset	No times retentive
Time range	
— time range / of the S7 timers / initial value	10 ms
— time range / of the S7 timers / full-scale value	9 990 s
IEC timer	

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● present	Yes
● Type	SFB
● Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	Total working and load memory (with backup battery)
Flag	
● Size, max.	16 kbyte; Size of bit memory address area
● Retentivity available	Yes
● Retentivity preset	MB 0 to MB 15
● Number of clock memories	8; in 1 memory byte
Local data	
● data volume / as local data / adjustable / maximum	64 kbyte
● data volume / as local data / 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	
Integrated power supply	No
Number of expansion units, max.	21
connectable OPs	63
Multicomputing	Yes; 4 CPUs max. (with UR1 or UR2)
Interface modules	
● Number of connectable IMs (total), max.	6
● Number of connectable IM 460s, max.	6
● Number of connectable IM 463s, max.	4; IM 463-2
Number of DP masters	
● integrated	2
● via CP	10; CP 443-5 Extended
● via IM 467	4
● Mixed mode IM + CP permitted	No; IM 467 not suitable for use with CP 443-5 Ext. and CP 443-1 EX4x, EX20, GX20 (in PROFINET IO mode)
● via interface module	2
● Number of pluggable S5 modules (via adapter capsule in central device), max.	6
Number of IO Controllers	
● integrated	0
● via CP	4; No mixed operation of CP443-1 EX40 and CP443-1 EX 41/EX20/GX20, max. 4 in central controller
Number of operable FMs and CPs (recommended)	
● FM	Limited by number of slots and number of connections
● CP, PtP	CP 440: Limited by number of slots; CP 441: limited by number of connections

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