

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

6ES7414-2XK05-0AB0

Siemens official documentation for the exact article number.

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SIMATIC S7-400, CPU 414-2 CENTRAL PROCESSING UNIT WITH:
1 MB WORKING MEMORY, (0,5 MB CODE, 0,5 MB DATA), 1.
INTERFACE MPI/DP 12 MBIT/S, 2. INTERFACE PROFIBUS DP



Figure similar

General information	
Product type designation	CPU 414-2
Hardware product version	03
Firmware version	V5.3
Engineering with	
• Programming package	STEP 7 V5.3 SP2 or higher with HW update
CiR – Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	15 µs
Supply voltage	
Rated value (DC)	No; Power supply via system power supply
• 24 V DC	
Input current	
from backplane bus 5 V DC, typ.	0.9 A
from backplane bus 5 V DC, max.	1.1 A
from backplane bus 24 V DC, max.	300 mA; 150 mA per DP interface

from interface 5 V DC, max.	90 mA; At each DP interface
Power loss	
Power loss, typ.	4.5 W
Power loss, max.	5 W
Memory	
Type of memory	RAM
Work memory	
• integrated	1 Mbyte
• integrated (for program)	0.5 Mbyte
• integrated (for data)	0.5 Mbyte
• expandable	No
Load memory	
• expandable FEPR0M	Yes; with Memory Card (FLASH)
• expandable FEPR0M, max.	64 Mbyte
• integrated RAM, max.	512 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.	125 µA; up to 40 °C
• Backup current, max.	550 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.	45 ns
for word operations, typ.	45 ns
for fixed point arithmetic, typ.	45 ns
for floating point arithmetic, typ.	135 ns
CPU-blocks	
DB	
• Number, max.	6 000; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	3 000; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	

• Number, max.	3 000; 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	4; OB 10-13
• Number of delay alarm OBs	4; OB 20-23
• Number of cyclic interrupt OBs	4; OB 32-35 (shortest cycle that can be set = 500 µs)
• Number of process alarm OBs	4; OB 40-43
• Number of DPV1 alarm OBs	3; OB 55-57
• Number of isochronous mode OBs	3; OB 61-63
• 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	1
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• Number	Unlimited (limited only by RAM capacity)
S7 times	
• 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	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total	Total working and load memory (with backup battery)
Flag	
• Number, max.	8 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
Data blocks	
• Number, max.	6 000; Number range: 1 to 16000
• Size, max.	64 kbyte
Local data	
• adjustable, max.	16 kbyte
• preset	8 kbyte
Address area	
I/O address area	
• Inputs	8 kbyte
• Outputs	8 kbyte
of which distributed	
— MPI/DP interface, inputs	2 kbyte
— MPI/DP interface, outputs	2 kbyte
— DP interface, inputs	6 kbyte
— DP interface, outputs	6 kbyte
Process image	
• Inputs, adjustable	8 kbyte
• Outputs, adjustable	8 kbyte
• Inputs, default	256 byte
• Outputs, default	256 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	65 536
— of which central	65 536
• Outputs	65 536