MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7416-3XR05-0AB0

CPU 416-3 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 6ES7416-3XR05-0AB0

10.8 Specifications of the CPU 416-3 (6ES7416-3XR05-0AB0)

Data

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General information	
Product type designation	CPU 416-3
Hardware version	04
Firmware version	V5.3
Engineering with	
Programming package	as of STEP7 V 5.3 SP2 with HW Update
CiR Configuration in RUN	
CiR synchronization time, base load	100 ms
CiR synchronization time, time per I/O byte	10 µs
Power supply	
Rated value (DC)	
• 24 V DC	No; voltage supplied via the system voltage supply
Input current	
From backplane bus 5 V DC, typ.	1.1 A
From backplane bus 5 V DC, max.	1.3 A
From the backplane bus 24 V DC, max.	450 mA; 150 mA per DP interface
From interface 5 V DC, max.	90 mA; for each DP interface
Power loss	
Typical power loss	5.5 W
Power loss, max.	6 W
Memory	
Type of memory	RAM
Work memory	
Integrated	11.2 MB
integrated (for program)	5.6 MB
integrated (for data)	5.6 MB
Expandable	No
Load memory	
Expandable FEPROM	Yes; with memory card (FLASH)
Expandable FEPROM, max.	64 MB
integrated RAM, max.	1 MB
Expandable RAM	Yes; with memory card (RAM)
Expandable RAM, max.	64 MB
Battery backup	
Available	Yes
With battery	Yes; all data
Without battery	No

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Battery	
Backup battery	
Backup battery current, typ.	125 µA; to 40 °C
Backup battery current, max.	550 µA
Backup battery time, max.	See the Module specifications reference manual, section 3.3.
Feed of external backup voltage to the CPU	5 to 15 V DC
CPU processing times	
For bit operations, typ.	30 ns
For word operations, typ.	30 ns
For integer arithmetic, typ.	30 ns
For floating-point arithmetic, typ.	90 ns
CPU blocks	
DB	
Number, max.	10000; number range: 1 to 16000
Size, max.	64 KB
FB	
Number, max.	5000; number range: 0 to 7999
Size, max.	64 KB
FC	
Number, max.	5000; number range: 0 to 7999
Size, max.	64 KB
OB	
Size, max.	64 KB
Number of free-cycle OBs	1; OB 1
Number of time-of-day interrupt OBs	8; OB 10-17
Number of time-delay interrupt OBs	4; OB 20-23
Number of cyclic interrupt OBs	9; OB 30-38 (smallest configurable cycle = 500 µs)
Number of hardware interrupt OBs	8; OB 40-47
Number of DPV1 interrupt OBs	3; OB 55-57
Number of isochronous OBs	4; OB 61-64
Number of multi-computing 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 levels within an error OB	2

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Counters, timers and their retentivity	
S7 counters	
Number	2048
Retentivity	
• Adjustable	Yes
• Low limit	0
• High limit	2047
• Default	C 0 to C 7
Counting range	
• Low limit	0
• High limit	999
IEC counters	
Available	Yes
Type	SFB
Number	Unlimited (limited only by the work memory)
S7 timers	
Number	2048
Retentivity	
• Adjustable	Yes
• Low limit	0
• High limit	2047
• Default	No retentive timers
Time range	
• Low limit	10 ms
• High limit	9990 s
IEC timers	
Available	Yes
Type	SFB
Number	Unlimited (limited only by the work memory)
Data areas and their retentivity	
Retentive data area, total	Total work and load memory (with backup battery)
Bit memories	
Number, max.	16 KB; size of bit memory address area
Retentivity available	Yes
Default retentivity	MB 0 to MB 15
Number of clock memories	8; in 1 memory byte
Local data	
Adjustable, max.	32 KB
Default	16 KB