

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

6ES7416-3XL00-0AB0

Siemens official documentation for the exact article number.

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Selected official Siemens pages follow this cover.

SIMATIC S7-400, CPU 416-3 Work memory 3.2 MB, (1.6 MB code, 1.6 MB data) 1st interface MPI/DP 12 Mbit/s, 2nd interface PROFIBUS DP, 3rd interface for IFM

General information	
Product type designation	CPU 416-3
CiR – Configuration in RUN	
CiR synchronization time, basic load	100 ms
CiR synchronization time, time per I/O byte	120 µs
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
Input current	
from backplane bus 5 V DC, typ.	1.6 A
from backplane bus 5 V DC, max.	1.8 A
from backplane bus 24 V DC, max.	450 mA; Total current consumption of the components connected to the MPI/DP interfaces, but no more than 150 mA per interface
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
• integrated	3.2 Mbyte
• integrated (for program)	1.6 Mbyte
• integrated (for data)	1.6 Mbyte
• expandable	No
Load memory	
• expandable FEPRM	Yes; with Memory Card (FLASH)
• expandable FEPRM, 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.	50 μ A
• Backup current, max.	460 μ A
• Feeding of external backup voltage to CPU	5 V DC to 15 V DC
CPU processing times	
for bit operations, typ.	0.08 μ s
for word operations, typ.	0.08 μ s
for fixed point arithmetic, typ.	0.08 μ s
for floating point arithmetic, typ.	0.48 μ s
CPU-blocks	
DB	
• Number, max.	4 095; DB 0 reserved
• Size, max.	64 kbyte
FB	
• Number, max.	2 048
• Size, max.	64 kbyte
FC	
• Number, max.	2 048
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
• Number of time alarm OBs	8
• Number of delay alarm OBs	4
• Number of cyclic interrupt OBs	9
• Number of process alarm OBs	8
Nesting depth	
• per priority class	24
• additional within an error OB	2
Counters, timers and their retentivity	
S7 counter	
• Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— lower limit	1
— upper limit	999
IEC counter	

• present	Yes
• Type	SFB
S7 times	
• Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Data areas and their retentivity	
retentive data area in total	Total working and load memory (with backup battery)
Flag	
• Number, max.	16 kbyte
• Retentivity available	Yes; MB 0 to MB 16383
• Retentivity preset	MB 0 to MB 15
• Number of clock memories	8; 1 memory byte
Address area	
I/O address area	
• Inputs	16 kbyte
• Outputs	16 kbyte
of which distributed	
— MPI/DP interface, inputs	2 kbyte
— MPI/DP interface, outputs	2 kbyte
— DP interface, inputs	8 kbyte
— DP interface, outputs	8 kbyte
Process image	
• Inputs, adjustable	16 kbyte; adjustable at the expense of the code area of the RAM
• Outputs, adjustable	16 kbyte; adjustable at the expense of the code area of the RAM
• Inputs, default	512 byte
• Outputs, default	512 byte
• consistent data, max.	244 byte
• Access to consistent data in process image	Yes
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; of which 6 ER with K-bus
connectable OPs	63 without message processing, 12 with message processing
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.	6; IM 463-2
Number of DP masters	
• integrated	2
• via CP	10
• via IM 467	4
• Mixed mode IM + CP permitted	No; IM 467 cannot be used jointly with CP 443-5 Ext.
• via interface module	1
• Number of pluggable S5 modules (via adapter capsule in central device), max.	6
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
• CP, LAN	64; limited by number of connections
• PROFIBUS and Ethernet CPs	14; incl. CP 443-5 Ext. and IM 467
Slots	
• required slots	2
Time of day	
Clock	
• Hardware clock (real-time)	Yes
• retentive and synchronizable	Yes
• Resolution	1 ms
Operating hours counter	
• Number	8
Clock synchronization	
• supported	Yes