

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7416-2FP07-0AB0

SIMATIC S7 400F CPU MODULE

Used with the applicable PLC System configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation

SIMATIC S7-400 advanced controller

Central processing units

SIPLUS S7-400 standard CPUs

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SIPLUS S7-400 CPU 417**Overview**

The most powerful SIMATIC S7-400 CPU

- Applicable for plants with maximum requirements in the high-end performance range
- With 2 plug-in slots for IF modules

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

For technical documentation on SIPLUS, see:
www.siemens.com/siplus-extreme

Technical specifications

Article number	6AG1417-4XT07-4AB0
Based on	6ES7417-4XT07-0AB0 SIPLUS S7-400 CPU417-4
Ambient conditions	
Ambient temperature in operation	
• Min.	0 °C; = Tmin
• max.	60 °C; = Tmax
Extended ambient conditions	
• Relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
- With condensation, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

Ordering data**Article No.**

SIPLUS CPU 417-4 CPU with main memory 32 MB (16 MB code and 16 MB data), 3 interfaces: 1x MPI/DP, DP each and 2x for IFM modules (plug-in) Exposure to media	6AG1417-4XT07-4AB0
Accessories	
Memory card RAM	See SIPLUS S7-400 CPU 412, page 1/21
FEPRM memory card Exposure to media • 32 MB	6AG1952-1KT00-4AA0

Article No.

RS 485 bus connector with 90° cable outlet	See SIPLUS S7-400 CPU 412, page 1/21
RS 485 bus connector with angled cable outlet	See SIPLUS S7-400 CPU 412, page 1/21
RS 485 bus connector with axial cable outlet	See SIPLUS S7-400 CPU 412, page 1/21
RS 485 repeater for PROFIBUS Transfer rate up to 12 Mbit/s; 24 V DC; IP20 enclosure Extended temperature range and exposure to media	6AG1972-0AA02-7XA0
Further accessories	See SIMATIC CPU 417, page 1/20

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

CPU 416F

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Overview

CPU 416F-2 and CPU 416F-3 PN/DP

- For constructing a fail-safe automation system for plants with increased safety requirements
- High-performance CPU in the top-end performance range
- Complies with safety requirements to SIL 3 acc. to IEC 61508 and PL e acc. to ISO 13849.1
- Standard and safety-related tasks can be performed with a single CPU
- Multi-processor mode is possible
- Safety-related communication with distributed I/O devices over PROFIBUS DP with the *PROFIsafe* profile
- Fail-safe I/O modules can be connected decentralized over the integrated interfaces (DP and PN with CPU416F-3 PN/DP) and/or through communication modules (CP443-5 Ext. and CP443-1 Adv.)
- Standard modules for non-safety-related applications can be operated centrally and decentralized

Technical specifications

Article number	6ES7416-2FP07-0AB0	6ES7416-3FS07-0AB0
	CPU 416F-2, MPI, PROFIBUS, 8 MB	CPU416F-3 PN/DP, 16 MB, 3 INTERFACES
General information		
Product type designation	CPU 416F-2	CPU416F-3 PN/DP
Engineering with		
• Programming package	STEP 7 V5.4 or higher with HSP 261	STEP 7 V5.5 or higher with HSP 262
Supply voltage		
Rated value (DC)		
• 24 V DC	No; Power supply via system power supply	No; Power supply via system power supply
Power loss		
Power loss, typ.	4.5 W	6.5 W
Memory		
Work memory		
• integrated	8 Mbyte	16 Mbyte
• integrated (for program)	4 Mbyte	8 Mbyte
• integrated (for data)	4 Mbyte	8 Mbyte
Load memory		
• expandable FEPRAM, max.	64 Mbyte	64 Mbyte
• integrated RAM, max.	1 Mbyte	1 Mbyte
• expandable RAM, max.	64 Mbyte	64 Mbyte
CPU processing times		
for bit operations, typ.	12.5 ns	12.5 ns
for word operations, typ.	12.5 ns	12.5 ns
for fixed point arithmetic, typ.	12.5 ns	12.5 ns
for floating point arithmetic, typ.	25 ns	25 ns
Counters, timers and their retentivity		
S7 counter		
• Number	2 048	2 048
IEC counter		
• present	Yes	Yes
S7 times		
• Number	2 048	2 048
IEC timer		
• present	Yes	Yes

Article number	6ES7416-2FP07-0AB0	6ES7416-3FS07-0AB0
	CPU 416F-2, MPI, PROFIBUS, 8 MB	CPU416F-3 PN/DP, 16 MB, 3 INTERFACES
Data areas and their retentivity		
Flag		
• Number, max.	16 kbyte; Size of bit memory address area	16 kbyte; Size of bit memory address area
Address area		
I/O address area		
• Inputs	16 kbyte	16 kbyte
• Outputs	16 kbyte	16 kbyte
Process image		
• Inputs, adjustable	16 kbyte	16 kbyte
• Outputs, adjustable	16 kbyte	16 kbyte
Time of day		
Clock		
• Hardware clock (real-time clock)	Yes	Yes
Operating hours counter		
• Number	16	16
Interfaces		
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFIBUS DP	1 x MPI/PROFIBUS DP, 1 x PROFINET (2 ports), 1 x PROFIBUS DP (optionally pluggable)
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP	1; Combined MPI / PROFIBUS DP
Number of other interfaces		1; PROFIBUS DP with IF 964-DP (plug-in option; MLFB: 6ES7964-2AA04-0AB0)
1. Interface		
Interface type	Integrated	Integrated
Physics	RS485/PROFIBUS+MPI	RS485/PROFIBUS+MPI
Functionality		
• MPI	Yes	Yes
• DP master	Yes	Yes
• DP slave	Yes	Yes
• PROFIBUS DP master	Yes	Yes
• PROFIBUS DP slave	Yes	Yes
DP master		
• Number of DP slaves, max.	32	32

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

CPU 416F

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Technical specifications (continued)

Article number	6ES7416-2FP07-0AB0 CPU 416F-2, MPI, PROFIBUS, 8 MB	6ES7416-3FS07-0AB0 CPU 416F-3 PN/DP, 16 MB, 3 INTERFACES
2. Interface		
Interface type	Integrated	PROFINET
Physics	RS 485 / PROFIBUS	Ethernet RJ45
Interface types		
• Number of ports		2
Functionality		
• DP master	Yes	No
• DP slave	Yes	No
• PROFINET IO Controller		Yes
• PROFINET IO Device		Yes
• PROFINET CBA		Yes
• PROFIBUS DP master	Yes	No
• PROFIBUS DP slave	Yes	No
DP master		
• Number of DP slaves, max.	125	
3. Interface		
Interface type		Pluggable interface module (IF)
Plug-in interface modules		IF 964-DP (MLFB: 6ES7964-2AA04-0AB0)
Physics		RS 485 / PROFIBUS
Functionality		
• MPI		No
• DP master		Yes
• DP slave		Yes
• PROFIBUS DP master		Yes
• PROFIBUS DP slave		Yes
DP master		
• Number of DP slaves, max.		125
Isochronous mode		
Isochronous operation (application synchronized up to terminal)	Yes; For PROFIBUS only	Yes; Via PROFIBUS DP or PROFINET interface
Communication functions		
PG/OP communication	Yes	Yes
Data record routing	Yes	Yes
Global data communication		
• supported	Yes	Yes
S7 basic communication		
• supported	Yes	Yes
S7 communication		
• supported	Yes	Yes
S5 compatible communication		
• supported	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
Standard communication (FMS)		
• supported	Yes; Via CP and loadable FB	Yes; Via CP and loadable FB

Article number	6ES7416-2FP07-0AB0 CPU 416F-2, MPI, PROFIBUS, 8 MB	6ES7416-3FS07-0AB0 CPU 416F-3 PN/DP, 16 MB, 3 INTERFACES
Open IE communication		
• TCP/IP		Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.		94
• ISO-on-TCP (RFC1006)	Via CP 443-1 and loadable FB	Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs
- Number of connections, max.		94
• UDP		Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.		94
Web server		
• supported	No	Yes
• Web server	No	Yes
Number of connections		
• overall	96	96
Standards, approvals, certificates		
Use in hazardous areas		
• ATEX	ATEX II 3 G Ex nA IIC T4 Gc	ATEX II 3 G Ex nA IIC T4 Gc
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	60 °C	60 °C
Configuration		
Know-how protection		
• User program protection/ password protection	Yes	Yes
• Block encryption	Yes; With S7 block Privacy	Yes; With S7 block Privacy
Dimensions		
Width	25 mm	50 mm
Height	290 mm	290 mm
Depth	219 mm	219 mm
Weights		
Weight, approx.	700 g	900 g

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

CPU 416F

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Ordering data	Article No.		Article No.
CPU 416F-2 For configuring safety-related automation systems; 8 MB work memory, 24 V DC power supply, MPI/PROFIBUS DP master interface, PROFIBUS DP master interface, slot for memory card, incl. slot number labels	6ES7416-2FP07-0AB0	FEPROM memory card • 64 KB • 256 KB • 1 MB • 2 MB • 4 MB • 8 MB • 16 MB • 32 MB • 64 MB	6ES7952-0KF00-0AA0 6ES7952-0KH00-0AA0 6ES7952-1KK00-0AA0 6ES7952-1KL00-0AA0 6ES7952-1KM00-0AA0 6ES7952-1KP00-0AA0 6ES7952-1KS00-0AA0 6ES7952-1KT00-0AA0 6ES7952-1KY00-0AA0
CPU 416F-3 PN/DP For configuring safety-related automation systems; work memory 16 MB, 24 V DC power supply, MPI/PROFIBUS DP master interface, PROFINET interface, PROFIBUS DP master interface, receptacle for 1 IF module, slot for memory card, incl. slot number labels	6ES7416-3FS07-0AB0	MPI cable For connection of SIMATIC S7 and PG via MPI; length: 5 m	6ES7901-0BF00-0AA0
S7 Distributed Safety programming tool V5.4 <i>Task:</i> Engineering tool for configuring failsafe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco <i>Requirement:</i> STEP 7 V5.3 SP3 or higher • Floating License • Floating License for 1 user, license key download without software or documentation ¹⁾ ; e-mail address required for delivery	6ES7833-1FC02-0YA5 6ES7833-1FC02-0YH5	IF 964-DP interface module For connecting an additional DP line	6ES7964-2AA04-0AB0
S7 Distributed Safety upgrade From V5.x to V5.4; Floating License for 1 user	6ES7833-1FC02-0YE5	Slot number labels 1 set (spare part)	6ES7912-0AA00-0AA0
RAM memory card • 64 KB • 256 KB • 1 MB • 2 MB • 4 MB • 8 MB • 16 MB • 64 MB	6ES7952-0AF00-0AA0 6ES7952-1AH00-0AA0 6ES7952-1AK00-0AA0 6ES7952-1AL00-0AA0 6ES7952-1AM00-0AA0 6ES7952-1AP00-0AA0 6ES7952-1AS00-0AA0 6ES7952-1AY00-0AA0	SIMATIC Manual Collection Electronic manuals on DVD, multi-language: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC-based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC	6ES7998-8XC01-8YE0
		SIMATIC Manual Collection update service for 1 year Current "Manual Collection" DVD and the three subsequent updates	6ES7998-8XC01-8YE2
		PROFIBUS bus components	
		RS 485 bus connector with 90° cable outlet Max. transfer rate 12 Mbps • Without PG interface • With PG interface	6ES7972-0BA12-0XA0 6ES7972-0BB12-0XA0
		RS 485 bus connector with angled cable outlet Max. transfer rate 12 Mbps • Without PG interface • With PG interface	6ES7972-0BA42-0XA0 6ES7972-0BB42-0XA0
		RS 485 bus connector with 90° cable outlet for FastConnect system Max. transfer rate 12 Mbps • Without PG interface - 1 unit - 100 units • With PG interface - 1 unit - 100 units	6ES7972-0BA52-0XA0 6ES7972-0BA52-0XB0 6ES7972-0BB52-0XA0 6ES7972-0BB52-0XB0
		RS 485 bus connector with axial cable outlet For SIMATIC OP, for connection to PPI, MPI, PROFIBUS	6GK1500-0EA02

¹⁾ For up-to-date information and download availability, see:
www.siemens.com/tia-online-software-delivery

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

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CPU 416F

Ordering data	Article No.		Article No.
PROFIBUS FastConnect bus cable Standard type with special design for fast mounting, 2-core, shielded, sold by the meter; max. delivery unit 1 000 m, minimum ordering quantity 20 m	6XV1830-0EH10	SCALANCE X204-2 Industrial Ethernet Switch Industrial Ethernet Switches with integral SNMP access, Web diagnostics, copper cable diagnostics and PROFINET diagnostics for configuring line, star and ring topologies; four 10/100 Mbps RJ45 ports and two FO ports	6GK5204-2BB10-2AA3
RS 485 repeater for PROFIBUS Transmission rate up to 12 Mbps; 24 V DC; IP20 enclosure	6ES7972-0AA02-0XA0	IE FC RJ45 plugs RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables	
PROFINET bus components		IE FC RJ45 Plug 180 180° cable outlet • 1 unit • 10 units • 50 units	6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0
IE FC TP standard cable GP 2x2 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug; PROFINET-compatible; with UL approval Sold by the meter	6XV1840-2AH10	PROFIBUS/PROFINET bus components For establishing MPI/PROFIBUS/ PROFINET communication	See catalog IK PI
FO standard cable GP (50/125) Standard cable, splittable, UL approval, sold by the meter	6XV1873-2A		

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

CPU 416F

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Overview

CPU 416F-2 and CPU 416F-3 PN/DP

- For constructing a fail-safe automation system for plants with increased safety requirements
- High-performance CPU in the top-end performance range
- Complies with safety requirements to SIL 3 acc. to IEC 61508 and PL e acc. to ISO 13849.1
- Standard and safety-related tasks can be performed with a single CPU
- Multi-processor mode is possible
- Safety-related communication with distributed I/O devices over PROFIBUS DP with the *PROFIsafe* profile
- Fail-safe I/O modules can be connected decentralized over the integrated interfaces (DP and PN with CPU416F-3 PN/DP) and/or through communication modules (CP443-5 Ext. and CP443-1 Adv.)
- Standard modules for non-safety-related applications can be operated centrally and decentralized

Technical specifications

Article number	6ES7416-2FP07-0AB0	6ES7416-3FS07-0AB0
	CPU 416F-2, MPI, PROFIBUS, 8 MB	CPU416F-3 PN/DP, 16 MB, 3 INTERFACES
General information		
Product type designation	CPU 416F-2	CPU416F-3 PN/DP
Engineering with		
• Programming package	STEP 7 V5.4 or higher with HSP 261	STEP 7 V5.5 or higher with HSP 262
Supply voltage		
Rated value (DC)		
• 24 V DC	No; Power supply via system power supply	No; Power supply via system power supply
Power loss		
Power loss, typ.	4.5 W	6.5 W
Memory		
Work memory		
• integrated	8 Mbyte	16 Mbyte
• integrated (for program)	4 Mbyte	8 Mbyte
• integrated (for data)	4 Mbyte	8 Mbyte
Load memory		
• expandable FEPRAM, max.	64 Mbyte	64 Mbyte
• integrated RAM, max.	1 Mbyte	1 Mbyte
• expandable RAM, max.	64 Mbyte	64 Mbyte
CPU processing times		
for bit operations, typ.	12.5 ns	12.5 ns
for word operations, typ.	12.5 ns	12.5 ns
for fixed point arithmetic, typ.	12.5 ns	12.5 ns
for floating point arithmetic, typ.	25 ns	25 ns
Counters, timers and their retentivity		
S7 counter		
• Number	2 048	2 048
IEC counter		
• present	Yes	Yes
S7 times		
• Number	2 048	2 048
IEC timer		
• present	Yes	Yes

Article number	6ES7416-2FP07-0AB0	6ES7416-3FS07-0AB0
	CPU 416F-2, MPI, PROFIBUS, 8 MB	CPU416F-3 PN/DP, 16 MB, 3 INTERFACES
Data areas and their retentivity		
Flag		
• Number, max.	16 kbyte; Size of bit memory address area	16 kbyte; Size of bit memory address area
Address area		
I/O address area		
• Inputs	16 kbyte	16 kbyte
• Outputs	16 kbyte	16 kbyte
Process image		
• Inputs, adjustable	16 kbyte	16 kbyte
• Outputs, adjustable	16 kbyte	16 kbyte
Time of day		
Clock		
• Hardware clock (real-time clock)	Yes	Yes
Operating hours counter		
• Number	16	16
Interfaces		
Interfaces/bus type	1 x MPI/PROFIBUS DP, 1 x PROFIBUS DP	1 x MPI/PROFIBUS DP, 1 x PROFINET (2 ports), 1 x PROFIBUS DP (optionally pluggable)
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP	1; Combined MPI / PROFIBUS DP
Number of other interfaces		1; PROFIBUS DP with IF 964-DP (plug-in option; MLFB: 6ES7964-2AA04-0AB0)
1. Interface		
Interface type	Integrated	Integrated
Physics	RS485/PROFIBUS+MPI	RS485/PROFIBUS+MPI
Functionality		
• MPI	Yes	Yes
• DP master	Yes	Yes
• DP slave	Yes	Yes
• PROFIBUS DP master	Yes	Yes
• PROFIBUS DP slave	Yes	Yes
DP master		
• Number of DP slaves, max.	32	32

SIMATIC S7-400 advanced controller

Central processing units

Fail-safe CPUs

CPU 416F

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Technical specifications (continued)

Article number	6ES7416-2FP07-0AB0 CPU 416F-2, MPI, PROFIBUS, 8 MB	6ES7416-3FS07-0AB0 CPU 416F-3 PN/DP, 16 MB, 3 INTERFACES
2. Interface		
Interface type	Integrated	PROFINET
Physics	RS 485 / PROFIBUS	Ethernet RJ45
Interface types		
• Number of ports		2
Functionality		
• DP master	Yes	No
• DP slave	Yes	No
• PROFINET IO Controller		Yes
• PROFINET IO Device		Yes
• PROFINET CBA		Yes
• PROFIBUS DP master	Yes	No
• PROFIBUS DP slave	Yes	No
DP master		
• Number of DP slaves, max.	125	
3. Interface		
Interface type		Pluggable interface module (IF)
Plug-in interface modules		IF 964-DP (MLFB: 6ES7964-2AA04-0AB0)
Physics		RS 485 / PROFIBUS
Functionality		
• MPI		No
• DP master		Yes
• DP slave		Yes
• PROFIBUS DP master		Yes
• PROFIBUS DP slave		Yes
DP master		
• Number of DP slaves, max.		125
Isochronous mode		
Isochronous operation (application synchronized up to terminal)	Yes; For PROFIBUS only	Yes; Via PROFIBUS DP or PROFINET interface
Communication functions		
PG/OP communication	Yes	Yes
Data record routing	Yes	Yes
Global data communication		
• supported	Yes	Yes
S7 basic communication		
• supported	Yes	Yes
S7 communication		
• supported	Yes	Yes
S5 compatible communication		
• supported	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5	Yes; Via FC AG_SEND and AG_RECV, max. via 10 CP 443-1 or 443-5
Standard communication (FMS)		
• supported	Yes; Via CP and loadable FB	Yes; Via CP and loadable FB

Article number	6ES7416-2FP07-0AB0 CPU 416F-2, MPI, PROFIBUS, 8 MB	6ES7416-3FS07-0AB0 CPU 416F-3 PN/DP, 16 MB, 3 INTERFACES
Open IE communication		
• TCP/IP		Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.		94
• ISO-on-TCP (RFC1006)	Via CP 443-1 and loadable FB	Yes; Via integrated PROFINET interface or CP 443-1 and loadable FBs
- Number of connections, max.		94
• UDP		Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.		94
Web server		
• supported	No	Yes
• Web server	No	Yes
Number of connections		
• overall	96	96
Standards, approvals, certificates		
Use in hazardous areas		
• ATEX	ATEX II 3 G Ex nA IIC T4 Gc	ATEX II 3 G Ex nA IIC T4 Gc
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	60 °C	60 °C
Configuration		
Know-how protection		
• User program protection/ password protection	Yes	Yes
• Block encryption	Yes; With S7 block Privacy	Yes; With S7 block Privacy
Dimensions		
Width	25 mm	50 mm
Height	290 mm	290 mm
Depth	219 mm	219 mm
Weights		
Weight, approx.	700 g	900 g

SIMATIC S7-400 advanced controllerCentral processing units
Fail-safe CPUs

CPU 416F

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Ordering data	Article No.		Article No.
CPU 416F-2 For configuring safety-related automation systems; 8 MB work memory, 24 V DC power supply, MPI/PROFIBUS DP master interface, PROFIBUS DP master interface, slot for memory card, incl. slot number labels	6ES7416-2FP07-0AB0	FEPROM memory card • 64 KB • 256 KB • 1 MB • 2 MB • 4 MB • 8 MB • 16 MB • 32 MB • 64 MB	6ES7952-0KF00-0AA0 6ES7952-0KH00-0AA0 6ES7952-1KK00-0AA0 6ES7952-1KL00-0AA0 6ES7952-1KM00-0AA0 6ES7952-1KP00-0AA0 6ES7952-1KS00-0AA0 6ES7952-1KT00-0AA0 6ES7952-1KY00-0AA0
CPU 416F-3 PN/DP For configuring safety-related automation systems; work memory 16 MB, 24 V DC power supply, MPI/PROFIBUS DP master interface, PROFINET interface, PROFIBUS DP master interface, receptacle for 1 IF module, slot for memory card, incl. slot number labels	6ES7416-3FS07-0AB0	MPI cable For connection of SIMATIC S7 and PG via MPI; length: 5 m	6ES7901-0BF00-0AA0
S7 Distributed Safety programming tool V5.4 Task: Engineering tool for configuring failsafe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco Requirement: STEP 7 V5.3 SP3 or higher • Floating License • Floating License for 1 user, license key download without software or documentation ¹⁾ ; e-mail address required for delivery	6ES7833-1FC02-0YA5 6ES7833-1FC02-0YH5	IF 964-DP interface module For connecting an additional DP line	6ES7964-2AA04-0AB0
S7 Distributed Safety upgrade From V5.x to V5.4; Floating License for 1 user	6ES7833-1FC02-0YE5	Slot number labels 1 set (spare part)	6ES7912-0AA00-0AA0
RAM memory card • 64 KB • 256 KB • 1 MB • 2 MB • 4 MB • 8 MB • 16 MB • 64 MB	6ES7952-0AF00-0AA0 6ES7952-1AH00-0AA0 6ES7952-1AK00-0AA0 6ES7952-1AL00-0AA0 6ES7952-1AM00-0AA0 6ES7952-1AP00-0AA0 6ES7952-1AS00-0AA0 6ES7952-1AY00-0AA0	SIMATIC Manual Collection Electronic manuals on DVD, multi-language: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC-based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC	6ES7998-8XC01-8YE0
		SIMATIC Manual Collection update service for 1 year Current "Manual Collection" DVD and the three subsequent updates	6ES7998-8XC01-8YE2
		PROFIBUS bus components	
		RS 485 bus connector with 90° cable outlet Max. transfer rate 12 Mbps • Without PG interface • With PG interface	6ES7972-0BA12-0XA0 6ES7972-0BB12-0XA0
		RS 485 bus connector with angled cable outlet Max. transfer rate 12 Mbps • Without PG interface • With PG interface	6ES7972-0BA42-0XA0 6ES7972-0BB42-0XA0
		RS 485 bus connector with 90° cable outlet for FastConnect system Max. transfer rate 12 Mbps • Without PG interface - 1 unit - 100 units • With PG interface - 1 unit - 100 units	6ES7972-0BA52-0XA0 6ES7972-0BA52-0XB0 6ES7972-0BB52-0XA0 6ES7972-0BB52-0XB0
		RS 485 bus connector with axial cable outlet For SIMATIC OP, for connection to PPI, MPI, PROFIBUS	6GK1500-0EA02

¹⁾ For up-to-date information and download availability, see:
www.siemens.com/tia-online-software-delivery