

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

Installation Instructions

6ES7414-2XL07-0AB0

Siemens official documentation for the exact article number.

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Selected official Siemens pages follow this cover.

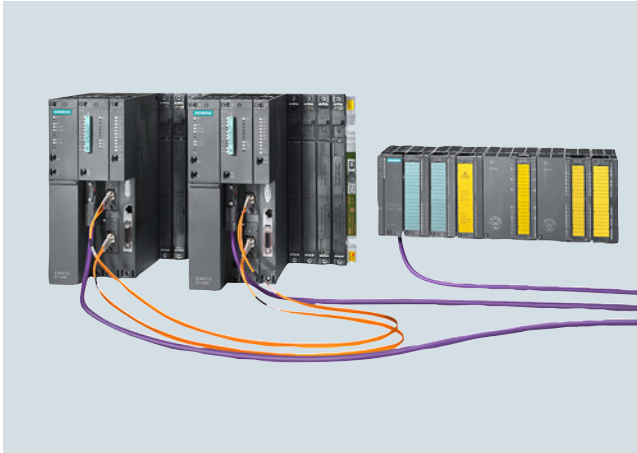
SIMATIC S7-400 advanced controller

Introduction

S7-400/S7-400H/S7-400F/FH

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Overview (continued)



S7-400F/FH

- Failsafe automation system for plants with increased safety requirements
- Complies with safety requirements to SIL 3 in accordance with IEC 61508, AK6 in accordance with DIN V 19250 and Cat. 4 in accordance with EN 954-1
- If required, also fault tolerant through redundant design
- Without additional wiring of the safety-related I/O
- Safety-relevant communication via PROFIBUS DP with PROFIsafe profile
- Based on S7-400H and distributed IOs ET 200M with fail-safe modules
- Standard modules for non-safety-related applications can also be used in the automation system
- Isolation module for joint use of fail-safe and standard modules in safety mode in one ET 200M

Technical specifications

General technical data SIMATIC S7-400

Degree of protection	IP20
Ambient temperature	0 to 60 °C
Relative humidity	5 to 95 %, no condensation
Atmospheric pressure	1080 to 795 hPa (corresponds to an altitude of -1000 m to +2,000 m)
Electromagnetic compatibility	
• Interference immunity	According to EN 61000-6-2
• Emitted interference	According to EN 61000-6-4
Mechanical load	
• Vibration, test according to / tested with	IEC 60068-2-6 (sine) 10 to 58 Hz; constant amplitude 0.075 mm; 58 to 500 Hz; constant acceleration 1 g; duration of oscillation: 10 frequency sweeps per axis in each direction of the three mutually perpendicular axes
• Shock, test according to / tested with	IEC 60068-2-27 Type of shock: Half-sine; strength of the shock 10 g (peak value), duration 6 ms direction of shock: 100 shocks in each of the 3 mutually perpendicular axes.

General technical data SIPLUS S7-400

Ambient temperature range	-25/0 ... +60/70 °C
Conformal coating	Coating of the printed circuit boards and the electronic components
Technical data	The technical data of the standard product applies except for the ambient conditions.

Ambient conditions

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 %; Relative humidity, incl. condensation / frost permitted (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 in corrosive atmospheres!
• against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 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!

SIMATIC S7-400 advanced controllerCentral processing units
Standard CPUs

CPU 412

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Ordering data	Article No.	Article No.
CPU 412-1 Work memory 512 KB, power supply 24 V DC, MPI/PROFIBUS DP master interface, slot for memory card, incl. slot number labels	6ES7412-1XJ07-0AB0	
CPU 412-2 Work memory 1 MB, power supply 24 V DC, MPI/PROFIBUS DP master interface, slot for memory card, incl. slot number labels	6ES7412-2XK07-0AB0	
CPU 412-2 PN Work memory 1 MB, power supply 24 V DC, MPI/PROFIBUS DP master interface, PROFINET interface, slot for memory card, incl. slot number labels	6ES7412-2EK07-0AB0	
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	
FEPRM 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	
MPI cable For connection of SIMATIC S7 and PG via MPI; length: 5 m	6ES7901-0BF00-0AA0	
Slot number labels 1 set (spare part)	6ES7912-0AA00-0AA0	
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	
		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
		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

SIMATIC S7-400 advanced controllerCentral processing units
Standard CPUs

CPU 414

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Ordering data	Article No.		Article No.
CPU 414-2 Work memory 2 MB, power supply 24 V DC, MPI/PROFIBUS DP master interface, slot for memory card, incl. slot number labels	6ES7414-2XL07-0AB0	Slot number labels 1 set (spare part)	6ES7912-0AA00-0AA0
CPU 414-3 Work memory 4 MB, power supply 24 V DC, MPI/PROFIBUS DP master interface, PROFIBUS DP master interface, slot for memory card, module slots for 1 IF module, incl. slot number labels	6ES7414-3XM07-0AB0	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
CPU 414-3 PN/DP Work memory 4 MB, power supply 24 V DC, MPI/PROFIBUS DP master interface, PROFINET interface, slot for memory card, module slot for 1 IF module, incl. slot number labels	6ES7414-3EM07-0AB0	SIMATIC Manual Collection update service for 1 year Current "Manual Collection" DVD and the three subsequent updates	6ES7998-8XC01-8YE2
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	PROFIBUS bus components	
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	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
MPI cable for connection of SIMATIC S7 and PG via MPI; length: 5 m	6ES7901-0BF00-0AA0	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
IF 964-DP interface module For connecting an additional DP line; for CPU 414-3, CPU 414-3 PN/DP, CPU 416-3, CPU 416-3 PN/DP, CPU 417-4	6ES7964-2AA04-0AB0	RS 485 bus connector with 90° cable outlet for FastConnect connection 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
		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

SIMATIC S7-400 advanced controller

Central processing units

Standard CPUs

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CPU 414

Ordering data	Article No.		Article No.
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 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	IE FC RJ45 Plug 180 180° cable outlet • 1 unit • 10 units • 50 units	6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0
FO standard cable GP (50/125) Standard cable, splittable, UL approval, sold by the meter	6XV1873-2A	PROFIBUS/PROFINET bus components For establishing MPI/PROFIBUS/PROFINET communication	See catalogs IK PI, CA 01
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		