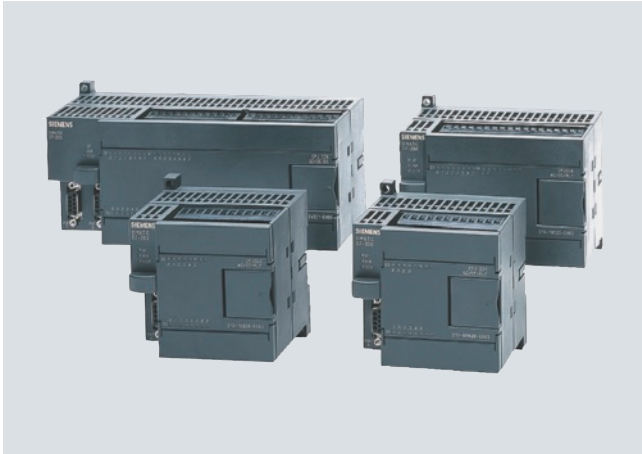


SIMATIC S7-200

Introduction

S7-200

Overview



SIMATIC S7-200

- The micro PLC that offers maximum automation at minimum cost.
- Extremely simple installation, programming and operation.
- Large-scale integration, space-saving, powerful.
- Can be used both for simple controls and for complex automation tasks.
- All CPUs can be used in stand-alone mode, in networks and within distributed structures.
- Suitable for applications where programmable controllers would not have been economically viable in the past.
- With outstanding real-time performance and powerful communication options (PPI, PROFIBUS DP, AS-Interface)

SIPLUS S7-200

- The PLC for use under extremely harsh ambient conditions
- With extended temperature range from -25 °C to +70 °C
- Use in environments with pollutant gases (corrosive gas atmospheres)
- Condensation and enhanced mechanical stress permissible
- With the proven PLC technology of the S7-200
- Easy handling, programming, maintenance and service
- Ideal for use in automobile construction, environmental technology, mining, chemical plants, conveying technology, food & beverages industry etc.
- The substitute for expensive special solutions

You will find more information at:

www.siemens.com/siplus-extreme

For brochures serving as selection guides for SIMATIC products refer to:

www.siemens.com/simatic/printmaterial

Technical specifications

General technical specifications SIMATIC S7-200

Degree of protection	IP20 according to IEC 529
Ambient temperature	
• Operation (95 % relative humidity)	
- With horizontal mounting	0 ... 55°C
- With vertical mounting	0 ... 45°C
• Transport and storage	-40 ... +70 °C
- with 95 % relative humidity	25 ... 55 °C
Isolation	
• 5/24 V DC circuits	Test voltage 500 V AC
• 115/230 V AC circuits to ground	Test voltage 1500 V AC
• 115/230 V AC circuits to 115/230 V AC circuits	Test voltage 1500 V AC
• 230 V AC circuits to 5/24 V DC circuits	Test voltage 1500 V AC
• 115 V AC circuits to 5/24 V DC circuits	Test voltage 1500 V AC
Electromagnetic compatibility	Requirements of EMC law
• Noise immunity according to EN 50082-2	Tested according to: IEC 801-2, IEC 801-3, IEC 801-4, EN 50141, EN 50204, IEC 801-5, VDE 0160
• Emitted interference according to EN 50081-1 and EN 50081-2	Tested according to EN 55011, Class A, Group 1 and EN 55011, Class B, Group 1
Mechanical rating	
• Vibrations, tested according to/ tested with	IEC 68, Part 2-6: 10 to 57 Hz; constant amplitude 0.3 mm; 58 ... 150 Hz; constant acceleration 1 g (mounted on DIN rail) or 2 g (mounted in control cabinet); type of vibration: frequency cycles with a rate of change of 1 octave/minute; vibration duration: 10 frequency cycles per axis in each direction of the 3 mutually perpendicular axes
• Shock, tested according to/tested with	IEC 68, Part 2-27/half-sine: shock strength 15 g (peak value), duration 11 ms, 6 shocks on each of the 3 mutually perpendicular axes

General technical specifications SIMATIC S7-200

Conformal coating	Coating of the printed circuit boards and the electronic components
Ambient temperature range	-25 ... +70 °C
Technical data	The technical data of the standard product applies except for the ambient conditions.
Ambient conditions:	
• Relative humidity	5 ... 100%, condensation allowed
• Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)
• Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ¹⁾²⁾
• Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... + 3500 m) Derating 10K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K
Conforms with standard for electronic equipment used on rolling stock (EN 50155, temperature T1, category 1)	Yes ³⁾

1) ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH < 49 ppm; O₃ < 0.1 ppm; NOX < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH < 247 ppm; O₃ < 1.0 ppm; NOX < 10.4 ppm

2) The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

3) Does not apply to:
6AG1 214-2AD23-2XB0
6AG1 214-2BD23-2XB0
6AG1 232-0HB22-2XB0
6AG1 235-0KD22-2XB0
6AG1 231-7PB22-2XA0
6AG1 901-3CB30-2XA0

SIMATIC S7-200

Central processing units

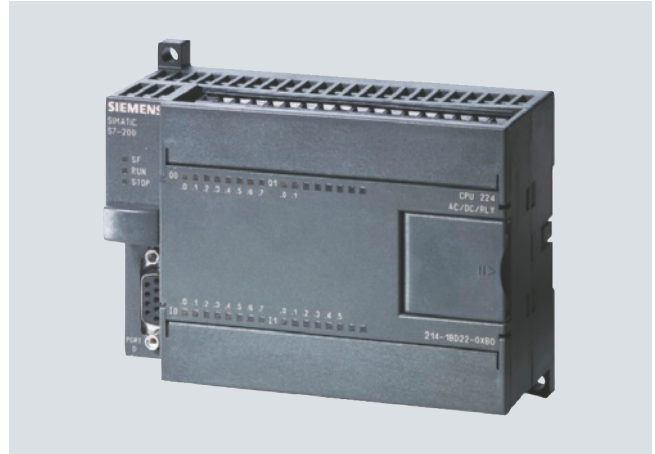
CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Overview CPU 221



- The smart compact solution
- With 10 inputs/outputs on board
- Not expandable

Overview CPU 224



- The compact high-performance CPU
- With 24 inputs/outputs on board
- Expandable with up to 7 expansion modules

Overview CPU 222



- The superior compact solution
- With 14 inputs/outputs on board
- Expandable with up to 2 expansion modules

Overview CPU 224 XP/224 XPsi



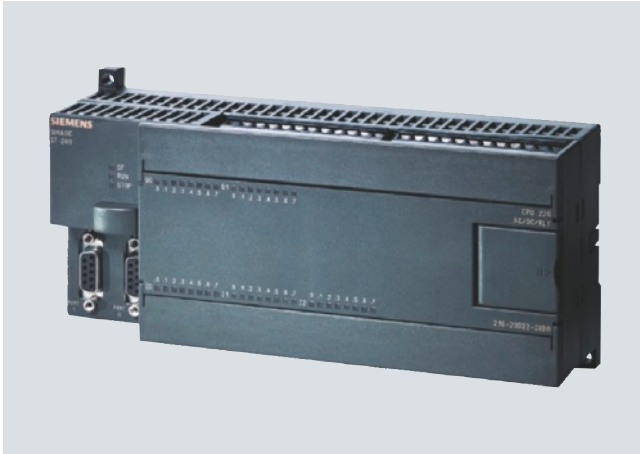
- The power CPU
- With 24 digital and 3 analog inputs/outputs onboard
- Expandable with up to 7 expansion modules

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPSi, CPU 226

Overview CPU 226



- The high-performance package for complex technical tasks
- With additional PPI port for more flexibility and communication options
- With 40 inputs/outputs on board
- Expansion capability for max. 7 expansion racks

3

Technical specifications

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Supply voltages				
Rated value				
• 24 V DC	Yes		Yes	
• permissible range, lower limit (DC)	20.4 V		20.4 V	
• permissible range, upper limit (DC)	28.8 V		28.8 V	
• 120 V AC		Yes		Yes
• 230 V AC		Yes		Yes
• permissible range, lower limit (AC)		85 V		85 V
• permissible range, upper limit (AC)		264 V		264 V
• permissible frequency range, lower limit		47 Hz		47 Hz
• permissible frequency range, upper limit		63 Hz		63 Hz
Load voltage L+				
Rated value (DC)	24 V	24 V	24 V	24 V
• permissible range, lower limit (DC)	20.4 V	5 V	20.4 V	5 V
• permissible range, upper limit (DC)	28.8 V	30 V	28.8 V	30 V
Load voltage L1				
Rated value (AC)		100 V; 100 to 230 V AC		100 V; 100 to 230 V AC
• permissible range, lower limit (AC)		5 V		5 V
• permissible range, upper limit (AC)		250 V		250 V
• permissible frequency range, lower limit		47 Hz		47 Hz
• permissible frequency range, upper limit		63 Hz		63 Hz
Current consumption				
Inrush current, max.	10 A; at 28.8 V	20 A; at 264 V	10 A; at 28.8 V	20 A; at 264 V
from supply voltage L+, max.	450 mA; 80 to 450 mA		500 mA; 85 to 500 mA, output current for expansion modules (DC 5 V) 340 mA	
from supply voltage L1, max.		120 mA; 15 to 60 mA (240 V); 30 to 120 mA (120 V); output current for expansion modules (5 V DC) 340 mA		140 mA; 20 to 70 mA (240 V); 40 to 140 mA (120 V); output current for expansion modules (5 V DC) 340 mA

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Backup battery				
Battery operation				
• Backup time, max.	50 h; (min. 8 h at 40 °C); 200 days (typ.) with optional battery module	50 h; (min. 8 h at 40 °C); 200 days (typ.) with optional battery module	50 h; (min. 8 h at 40 °C); 200 days (typ.) with optional battery module	50 h; (min. 8 h at 40 °C); 200 days (typ.) with optional battery module
Memory				
Number of memory modules (optional)	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files
Data and program memory				
• Data memory, max.	2 Kibyte	2 Kibyte	2 Kibyte	2 Kibyte
• Program memory, max.	4 Kibyte	4 Kibyte	4 Kibyte	4 Kibyte
Backup				
• present	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance- free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high- performance capacitor; optional battery for long- term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance- free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high- performance capacitor; optional battery for long- term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance- free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high- performance capacitor; optional battery for long- term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance- free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high- performance capacitor; optional battery for long- term buffering
CPU processing times				
for bit operations, max.	0.22 µs	0.22 µs	0.22 µs	0.22 µs
Counters, timers and their retentivity				
S7 counter				
• Number	256	256	256	256
• of which retentive with battery				
- adjustable	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery
- lower limit	1	1	1	1
- upper limit	256	256	256	256
• Counting range				
- lower limit	0	0	0	0
- upper limit	32 767	32 767	32 767	32 767
S7 times				
• Number	256	256	256	256
• of which retentive with battery				
- adjustable	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery
- upper limit	64	64	64	64
• Time range				
- lower limit	1 ms	1 ms	1 ms	1 ms
- upper limit	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

3

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Data areas and their retentivity				
Flag				
• Number, max.	32 byte	32 byte	32 byte	32 byte
• Retentivity available	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7
• of which retentive with battery	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable
• of which retentive without battery	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable
Hardware configuration				
Connectable programming devices/PCs	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC
Expansion devices, max.			2; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	2; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.
Extension of distributed I/O				
• Analog inputs/outputs, max.			10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM)	10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM)
• Digital inputs/outputs, max.			78; max. 40 inputs and 38 outputs (CPU + EM)	78; max. 40 inputs and 38 outputs (CPU + EM)
• AS-Interface inputs/outputs max.			62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)
Connection method				
Plug-in I/O terminals	No	No	No	No
1st interface				
Type of interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface
Physics	RS 485	RS 485	RS 485	RS 485
Functionality				
• MPI	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s
• PPI	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
• Serial data exchange	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter
MPI				
• Transmission rate, max.	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s
• Transmission rate, min.	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s
Programming				
Programming language				
• LAD	Yes	Yes	Yes	Yes
• FBD	Yes	Yes	Yes	Yes
• STL	Yes	Yes	Yes	Yes
Command set	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions
Program processing	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)
Program organization	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer
Number of subroutines, max.	64	64	64	64
• User program protection/ password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection
Digital inputs				
Number of digital inputs	6; Integrated	6; Integrated	8	8
m/p-reading	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group
Input voltage				
• Rated value, DC	24 V	24 V	24 V	24 V
• for signal "0"	0 to 5 V	0 to 5 V	0 to 5 V	0 to 5 V
• for signal "1"	min. 15 V	min. 15 V	min. 15 V	min. 15 V
Input current				
• for signal "1", typ.	2.5 mA	2.5 mA	2.5 mA	2.5 mA
Input delay (for rated value of input voltage)				
• for standard inputs				
- parameterizable	Yes; all	Yes; all	Yes; all	Yes; all
- at "0" to "1", min.	0.2 ms	0.2 ms	0.2 ms	0.2 ms
- at "0" to "1", max.	12.8 ms	12.8 ms	12.8 ms	12.8 ms
• for interrupt inputs				
- parameterizable	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3
• for counter/technological functions				
- parameterizable	Yes; (E0.0 to E0.5) 30 kHz	Yes; (E0.0 to E0.5) 30 kHz	Yes; (E0.0 to E0.5) 30 kHz	Yes; (E0.0 to E0.5) 30 kHz

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Cable length				
• Cable length, shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m
• Cable length unshielded, max.	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals
Digital outputs				
Number of digital outputs	4; Transistor	4; Relay	6; Transistor	6; Relay
Short-circuit protection	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally
Limitation of inductive shutdown voltage to	1 W		1 W	
Switching capacity of the outputs				
• with resistive load, max.	0.75 A	2 A	0.75 A	2 A
• on lamp load, max.	5 W	30 W DC; 200 W AC	5 W	30 W DC; 200 W AC
Output voltage				
• for signal "1", min.	20 V DC	L+/L1	20 V DC	L+/L1
Output current				
• for signal "1" rated value	750 mA	2 A	750 mA	2 A
• for signal "0" residual current, max.	0.1 mA	0 mA	10 µA	0 mA
Output delay with resistive load				
• 0 to "1", max.	15 µs; of the standard outputs, max. (Q 0.2 to Q 0.3) 15 µs; of the pulse outputs, max. (Q 0.0 to Q 0.1) 2 µs	10 ms; all outputs	15 µs; of the standard outputs, max. (Q 0.2 to Q 0.5) 15 µs; of the pulse outputs, max. (Q 0.0 to Q 0.1) 2 µs	10 ms; all outputs
• 1 to "0", max.	130 µs; of the standard outputs, max. (Q 0.2 to Q 0.3) 100 µs; of the pulse outputs, max. (Q 0.0 to Q 0.1) 10 µs	10 ms; all outputs	130 µs; of the standard outputs, max. (Q 0.2 to Q 0.5) 100 µs; of the pulse outputs, max. (Q 0.0 to Q 0.1) 10 µs	10 ms; all outputs
Parallel switching of 2 outputs				
• for increased power	Yes	No	Yes	No
Switching frequency				
• of the pulse outputs, with resistive load, max.	20 kHz; Q 0.0 to Q 0.1		20 kHz; Q 0.0 to Q 0.1	
Aggregate current of outputs (per group)				
• horizontal installation				
- up to 55 °C, max.	3 A	6 A	4.5 A	6 A
• up to 40 °C, max.	3 A	6 A	4.5 A	6 A
Cable length				
• Cable length, shielded, max.	500 m	500 m	500 m	500 m
• Cable length unshielded, max.	150 m	150 m	150 m	150 m
Relay outputs				
Number of operating cycles		10 000 000; mechanically 10 million, at rated load voltage 100,000		10 000 000; mechanically 10 million, at rated load voltage 100,000
Analog inputs				
Number of analog potentiometers	1; Analog potentiometer; resolution 8 bit	1; Analog potentiometer; resolution 8 bit	1; Analog potentiometer; resolution 8 bit	1; Analog potentiometer; resolution 8 bit
Encoder supply				
24 V encoder supply				
• 24 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 20.4 bis 28.8 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 20.4 bis 28.8 V
• Short-circuit protection	Yes; electronic at 600 mA	Yes; electronic at 600 mA	Yes; electronic at 600 mA	Yes; electronic at 600 mA
• Output current, max.	180 mA	180 mA	180 mA	180 mA

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Encoder				
Connectable encoders				
• 2-wire BERS	Yes	Yes	Yes	Yes
- permissible quiescent current (2-wire BERS), max.	1 mA	1 mA	1 mA	1 mA
Integrated Functions				
Number of counters	4; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	4; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	4; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	4; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.
Counter frequency (counter) max.	30 kHz	30 kHz	30 kHz	30 kHz
Number of alarm inputs	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges
Number of pulse outputs	2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option		2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option	
Limit frequency (pulse)	20 kHz		20 kHz	
Galvanic isolation				
Galvanic isolation digital inputs				
• between the channels	Yes	Yes	Yes	Yes
• between the channels, in groups of	2 and 4	2 and 4	4	4
Galvanic isolation digital outputs				
• between the channels	Yes; Optocoupler	Yes; Relay	Yes; Optocoupler	Yes; Relay
• between the channels, in groups of	4	1 and 3	6	3
Permissible potential difference				
between different circuits	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC
Environmental requirements				
Ambient conditions	For further ambient conditions, see "Automation System S7200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"
Operating temperature				
• vertical installation, min.	0 °C	0 °C	0 °C	0 °C
• vertical installation, max.	45 °C	45 °C	45 °C	45 °C
• horizontal installation, min.	0 °C	0 °C	0 °C	0 °C
• horizontal installation, max.	55 °C	55 °C	55 °C	55 °C
Air pressure				
• permissible range, min.	860 hPa	860 hPa	860 hPa	860 hPa
• permissible range, max.	1 080 hPa	1 080 hPa	1 080 hPa	1 080 hPa
Relative humidity				
• Operation, min.	5 %	5 %	5 %	5 %
• Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Degree of protection				
IP20	Yes	Yes	Yes	Yes
Dimensions and weight				
Dimensions				
• Width	90 mm	90 mm	90 mm	90 mm
• Height	80 mm	80 mm	80 mm	80 mm
• Depth	62 mm	62 mm	62 mm	62 mm
Weight				
• Weight, approx.	270 g	310 g	270 g	310 g

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Supply voltages							
Rated value							
• 24 V DC	Yes		Yes		Yes	Yes	
• permissible range, lower limit (DC)	20.4 V		20.4 V		20.4 V	20.4 V	
• permissible range, upper limit (DC)	28.8 V		28.8 V		28.8 V	28.8 V	
• 120 V AC		Yes		Yes			Yes
• 230 V AC		Yes		Yes			Yes
• permissible range, lower limit (AC)		85 V		85 V			85 V
• permissible range, upper limit (AC)		264 V		264 V			264 V
• permissible frequency range, lower limit		47 Hz		47 Hz			47 Hz
• permissible frequency range, upper limit		63 Hz		63 Hz			63 Hz
Load voltage L+							
• Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V	24 V
• permissible range, lower limit (DC)	20.4 V	5 V	20.4 V	5 V	20.4 V	20.4 V	5 V
• permissible range, upper limit (DC)	28.8 V	30 V	28.8 V	30 V	28.8 V	28.8 V	30 V
Load voltage L1							
• Rated value (AC)		100 V; 100 to 230 V AC		100 V; 100 to 230 V AC			100 V; 100 to 230 V AC
• permissible range, lower limit (AC)		5 V		5 V			5 V
• permissible range, upper limit (AC)		250 V		250 V			250 V
• permissible frequency range, lower limit		47 Hz		47 Hz			47 Hz
• permissible frequency range, upper limit		63 Hz		63 Hz			63 Hz
Current consumption							
Inrush current, max.	12 A; at 28.8 V	20 A; at 264 V	12 A; at 28.8 V	20 A; at 264 V	12 A; at 28.8 V	10 A; at 28.8 V	20 A; at 264 V
from supply voltage L+, max.	700 mA; 110 to 700 mA, output current for expansion modules (5 V DC) 660 mA		900 mA; 120 to 900 mA, output current for expansion modules (5 V DC) 660 mA		900 mA; 120 to 900 mA, output current for expansion modules (5 V DC) 660 mA	1 050 mA; 150 to 1050 mA output current for expansion modules (D5 V DC) 1000 mA	

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 Xpsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
from supply voltage L1, max.		200 mA; 30 to 100 mA (240 V); 60 to 200 mA (120 V); output current for expansion modules (5 V DC) 600 mA		220 mA; 35 to 100 mA (240 V); 70 to 220 mA (120 V); output current for expansion modules (5 V DC) 600 mA			320 mA; 40 to 160 mA (240 V); 80 to 320 mA (120 V); output current for expansion modules (5 V DC) 1000 mA
Backup battery							
Battery operation							
• Backup time, max.	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module
Memory							
Number of memory modules (optional)	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files
Data and program memory							
• Data memory, max.	8 Kibyte	8 Kibyte	10 Kibyte	10 Kibyte	10 Kibyte	10 Kibyte	10 Kibyte
• Program memory, max.	12 Kibyte; 8 KB with active run-time edit	12 Kibyte; 8 KB with active run-time edit	16 Kibyte; 12 KB with active run-time edit	16 Kibyte; 12 KB with active run-time edit	16 Kibyte; 12 KB with active run-time edit	24 Kibyte; 16 KB with active run-time edit	24 Kibyte; 16 KB with active run-time edit
Backup							
• present	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering	Yes; Program: Entire program maintenance-free on integral EEPROM, program-mable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
CPU processing times for bit operations, max.	0.22 µs	0.22 µs	0.22 µs	0.22 µs	0.22 µs	0.22 µs	0.22 µs
Counters, timers and their retentivity							
S7 counter							
• Number	256	256	256	256	256	256	256
• of which retentive with battery							
- adjustable	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery
- lower limit	1	1	1	1	1	1	1
- upper limit	256	256	256	256	256	256	256
• Counting range							
- lower limit	0	0	0	0	0	0	0
- upper limit	32 767	32 767	32 767	32 767	32 767	32 767	32 767
S7 times							
• Number	256	256	256	256	256	256	256
• of which retentive with battery							
- adjustable	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery	Yes; via high-performance capacitor or battery
- upper limit	64	64	64	64	64	64	64
• Time range							
- lower limit	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms
- upper limit	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min
Data areas and their retentivity							
Flag							
• Number, max.	32 byte	32 byte	32 byte	32 byte	32 byte	32 byte	32 byte
• Retentivity available	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7	Yes; M 0.0 to M 31.7
• of which retentive with battery	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable	0 to 255, via high-performance capacitor or battery, adjustable
• of which retentive without battery	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable	0 to 112 in EEPROM, adjustable
Hardware configuration							
Connectable programming devices/PCs	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC	SIMATIC PG/PC, standard PC

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 Xpsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Expansion devices, max.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.
Extension of distributed I/O							
• Analog inputs/outputs, max.	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	38; 2 onboard inputs and 1 output, also max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	38; 2 onboard inputs and 1 output, also max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	38; 2 onboard inputs and 1 output, also max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)
• Digital inputs/outputs, max.	168; max. 94 inputs and 74 outputs (CPU + EM)	168; max. 94 inputs and 74 outputs (CPU + EM)	168; max. 94 inputs and 74 outputs (CPU + EM)	168; max. 94 inputs and 74 outputs (CPU + EM)	168; max. 94 inputs and 74 outputs (CPU + EM)	148; max. 128 inputs and 120 outputs (CPU+EM)	148; max. 128 inputs and 120 outputs (CPU+EM)
• AS-Interface inputs/outputs max.	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)	62; AS-Interface A/B slaves (CP 243-2)
Connection method							
Plug-in I/O terminals	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1st interface							
Type of interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface
Physics	RS 485	RS 485	RS 485	RS 485	RS 485	RS 485	RS 485
Functionality							
• MPI	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/ S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/ CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
• PPI	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s
• Serial data exchange	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter
MPI							
• Transmission rate, max.	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s
• Transmission rate, min.	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s
2nd interface							
Type of interface			Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface
Physics			RS 485	RS 485	RS 485	RS 485	RS 485
Functionality							
• MPI			Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s	Yes; as MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communications is possible in the MPI network with restrictions; transmission rates: 19.2 / 187.5 kbit/s

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 Xpsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
• PPI			Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/ CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/ CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/ CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/ CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s	Yes; with PPI protocol for programming functions, HMI functions (TD 200, OP), S7-200-internal CPU/ CPU communications; transmission rates 9.6 / 19.2 / 187.5 kbit/s
• serial data exchange			Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter	Yes; as freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbit/s; the PC / PPI cable can also be used as RS232 / RS485 converter
MPI							
• Transmission rate, max.			187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s	187.5 kbit/s
• Transmission rates, min.			19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s	19.2 kbit/s
Programming							
Programming language							
• LAD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• FBD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• STL	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Command set	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPSi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Program processing	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)
Program organization	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer
Number of subroutines, max.	64	64	64	64	64	64	64
• User program protection/password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection	Yes; 3-stage password protection
Digital inputs							
Number of digital inputs	14	14	14	14	14	24	24
m/p-reading	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group	Yes; optionally, per group
Input voltage							
• Rated value, DC	24 V	24 V	24 V	24 V	24 V	24 V	24 V
• for signal "0"	0 to 5 V	0 to 5 V	0 to 5 V; 0 to 1 V (I 0.3 to I 0.5)	0 to 5 V; 0 to 1 V (I 0.3 to I 0.5)	0 to 5 V; 0 to 1 V (I 0.3 to I 0.5)	0 to 5 V	0 to 5 V
• for signal "1"	min. 15 V	min. 15 V	min. 15 V; min. 4 V (I 0.3 to I 0.5)	min. 15 V; min. 4 V (I 0.3 to I 0.5)	min. 15 V; min. 4 V (I 0.3 to I 0.5)	min. 15 V	min. 15 V
Input current							
• for signal "1", typ.	2.5 mA	2.5 mA	2.5 mA; 8 mA for I 0.3 to I 0.5	2.5 mA; 8 mA for I 0.3 to I 0.5	2.5 mA; 8 mA for I 0.3 to I 0.5	2.5 mA	2.5 mA
Input delay (for rated value of input voltage)							
• for standard inputs							
- parameterizable	Yes; all	Yes; all	Yes; all	Yes; all	Yes; all	Yes; all	Yes; all
- at "0" to "1", min.	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
- at "0" to "1", max.	12.8 ms	12.8 ms	12.8 ms	12.8 ms	12.8 ms	12.8 ms	12.8 ms
• for interrupt inputs							
- parameterizable	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3	Yes; I 0.0 to I 0.3
• for counter/technological functions							
- parameterizable	Yes; (E0.0 to E1.5) 30 kHz	Yes; (E0.0 to E1.5) 30 kHz	Yes; (E0.0 to E1.5) up to 200 kHz	Yes; (E0.0 to E1.5) up to 200 kHz	Yes; (E0.0 to E1.5) up to 200 kHz	Yes; (E0.0 to E1.5) 30 kHz	Yes; (E0.0 to E1.5) 30 kHz
Cable length							
• Cable length, shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m	500 m; Standard input: 500 m, high-speed counters: 50 m
• Cable length unshielded, max.	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals	300 m; not for high-speed signals

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Digital outputs							
Number of digital outputs	10; Transistor	10; Relay	10; Transistor	10; Relay	10; Transistor current sinking	16; Transistor	16; Relay
Short-circuit protection	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally
Limitation of inductive shutdown voltage to	1 W		1 W		1 W	1 W	
Switching capacity of the outputs							
• with resistive load, max.	0.75 A	2 A	0.75 A	2 A	0.75 A	0.75 A	2 A
• on lamp load, max.	5 W	200 W; 30 W DC; 200 W AC	5 W	200 W; 30 W DC; 200 W AC	5 W	5 W	200 W; 30 W DC; 200 W AC
Output voltage							
• for signal "1", min.	20 V DC	L+/L1	L+ (-0.4 V (5 V / 20.4 V for A 0.0 to A 0.4; 20.4 V A 0.5 to A1.1))	L+/L1	1M -0.4 V	20 V DC	L+/L1
Output current							
• for signal "1" rated value	750 mA	2 A	750 mA	2 A	750 mA	750 mA	2 A
• for signal "0" residual current, max.	10 µA	0 mA	10 µA	0 mA	10 µA	10 µA	0 mA
Output delay with resistive load							
• 0 to "1", max.	15 µs; of the standard outputs, max. (Q0.2 to Q1.1) 2 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 2 µs	10 ms; all outputs	15 µs; of the standard outputs, max. (Q0.2 to Q1.1) 15 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 0.5 µs	10 ms; all outputs	15 µs; of the standard outputs, max. (Q0.2 to Q1.1) 15 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 0.5 µs	15 µs; of the standard outputs, max. (Q0.2 to Q1.1) 2 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 2 µs	10 ms; all outputs
• 1 to "0", max.	130 µs; of the standard outputs, max. (Q0.2 to Q1.1) 10 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 10 µs	10 ms; all outputs	130 µs; of the standard outputs, max. (Q0.2 to Q1.1) 130 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 1.5 µs	10 ms; all outputs	130 µs; of the standard outputs, max. (Q0.2 to Q1.1) 130 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 1.5 µs	130 µs; of the standard outputs, max. (Q0.2 to Q1.1) 10 µs; of the pulse outputs, max. (Q0.0 to Q0.1) 10 µs	10 ms; all outputs
Parallel switching of 2 outputs							
• for increased power	Yes	No	Yes	No	Yes	Yes	No
Switching frequency							
• of the pulse outputs, with resistive load, max.	20 kHz; Q 0.0 to Q 0.1	1 Hz	100 kHz; Q 0.0 to Q 0.1	1 Hz	100 kHz; Q 0.0 to Q 0.1	20 kHz; Q 0.0 to Q 0.1	1 kHz
Aggregate current of outputs (per group)							
• horizontal installation							
- up to 55 °C, max.	6 A	10 A	3.75 A	10 A	3.75 A	6 A	10 A
• up to 40 °C, max.	6 A	10 A	3.75 A	10 A	3.75 A	6 A	10 A
Cable length							
• Cable length, shielded, max.	500 m	500 m	500 m	500 m	500 m	500 m	500 m
• Cable length unshielded, max.	150 m	150 m	150 m	150 m	150 m	150 m	150 m

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Relay outputs							
Number of operating cycles		10 000 000; mechanically 10 million, at rated load voltage 100,000		10 000 000; mechanically 10 million, at rated load voltage 100,000			10 000 000; mechanically 10 million, at rated load voltage 100,000
Analog inputs							
Number of analog potentiometers	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit	2; Analog potentiometer; resolution 8 bit
Encoder supply							
24 V encoder supply							
• 24 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 20.4 bis 28.8 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 20.4 bis 28.8 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 15.4 to 28.8 V	Yes; permissible range: 20.4 bis 28.8 V
• Short-circuit protection	Yes; electronic at 280 mA	Yes; electronic at 280 mA	Yes; electronic at 280 mA	Yes; electronic at 280 mA	Yes; electronic at 280 mA	Yes; electronic at 400 mA	Yes; electronic at 400 mA
• Output current, max.	280 mA	280 mA	280 mA	280 mA	280 mA	400 mA	400 mA
Encoder							
Connectable encoders							
• 2-wire BEROS	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- permissible quiescent current (2-wire BEROS), max.	1 mA	1 mA	1 mA	1 mA	1 mA	1 mA	1 mA
Integrated Functions							
Number of counters	6; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (2 to 200 kHz and 4 to 30 kHz), 32 bit (incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (2 to 200 kHz and 4 to 30 kHz), 32 bit (incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (2 to 200 kHz and 4 to 30 kHz), 32 bit (incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.	6; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Counter frequency (counter) max.	30 kHz	30 kHz	200 kHz	200 kHz	200 kHz	30 kHz	30 kHz
Number of alarm inputs	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges	4; 4 rising edges and/or 4 falling edges
Number of pulse outputs	2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option		2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option		2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option	2; high-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option	
Limit frequency (pulse)	20 kHz		20 kHz		20 kHz	20 kHz	
Galvanic isolation							
Galvanic isolation digital inputs							
• between the channels	Yes	Yes	Yes	Yes	Yes	Yes	Yes; Optocoupler
• between the channels, in groups of	6 and 8	6 and 8	6 and 8	6 and 8	6 and 8	13 and 11	13 and 11
Galvanic isolation digital outputs							
• between the channels	Yes; Optocoupler	Yes; Relay	Yes; Optocoupler	Yes; Relay	Yes; Optocoupler	Yes; Optocoupler	Yes; Relay
• between the channels, in groups of	5	3 and 4	5	3 and 4	10	8 and 8	4, 5 and 7
Permissible potential difference							
between different circuits	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC
Environmental requirements							
Environmental conditions							
	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"	For further ambient conditions, see "Automation System S7-200, System Manual"
Operating temperature							
• vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• vertical installation, max.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
• horizontal installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• horizontal installation, max.	55 °C	55 °C	55 °C	55 °C	55 °C	55 °C	55 °C
Air pressure							
• permissible range, min.	860 hPa	860 hPa	860 hPa	860 hPa	860 hPa	860 hPa	860 hPa
• permissible range, max.	1 080 hPa	1 080 hPa	1 080 hPa	1 080 hPa	1 080 hPa	1 080 hPa	1 080 hPa
Relative humidity							
• Operation, min.	5 %	5 %	5 %	5 %	5 %	5 %	5 %
• Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2	95 %; RH class 2 in accordance with IEC 1131-2

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPSi, CPU 226

Technical specifications (continued)

	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0	6ES7 214-2AS23-0XB0	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Degree of protection							
IP20	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dimensions and weight							
Dimensions							
• Width	120.5 mm	120.5 mm	140 mm	140 mm	140 mm	196 mm	196 mm
• Height	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm
• Depth	62 mm	62 mm	62 mm	62 mm	62 mm	62 mm	62 mm
Weight							
• Weight, approx.	360 g	410 g	390 g	440 g	390 g	550 g	660 g

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPsi, CPU 226

3

Ordering data	Order No.	Order No.
CPU 221 Compact CPU, work memory 4 KB, power supply 24 V DC, 6 DI/4 DO integrated Compact CPU, work memory 4 KB, power supply 100 V to 230 V AC, 6 DI/4 DO integrated, relay outputs	6ES7 211-0AA23-0XB0 6ES7 211-0BA23-0XB0	S7-200 True Power Box Complete package, comprising CPU 222, STEP 7 Micro/WIN V4, simulator, intelligent USB/PPI multi-master cable, manual; delivered in a practical box German J 6ES7 298-0AA20-0AA3 English J 6ES7 298-0AA20-0BA3
CPU 222 Compact CPU, expandable, work memory 4 KB, power supply 24 V DC, 8 DI/6 DO integrated Compact CPU, expandable, work memory 4 KB, power supply 100 V to 230 V AC, 8 DI/6 DO integrated, relay outputs	6ES7 212-1AB23-0XB0 6ES7 212-1BB23-0XB0	MC 291 memory module, EEPROM for CPU 221/222//224/224 XP/226 64 KB 6ES7 291-8GF23-0XA0 256 KB 6ES7 291-8GH23-0XA0
CPU 224 Compact CPU, expandable, work memory 8/12 KB program, 8 KB data, power supply 24 V DC, 14 DI/10 DO integrated Compact CPU, expandable, work memory 8/12 KB program, 8 KB data, power supply 100 V to 230 V AC, 14 DI/10 DO integrated, relay outputs	6ES7 214-1AD23-0XB0 6ES7 214-1BD23-0XB0	Ground terminal 10 units 6ES5 728-8MA11 Front flap set contains various cover flaps for CPUs and EMs; spare part 6ES7 291-3AX20-0XA0
CPU 224 XP Compact CPU, expandable, work memory 12/16 KB program, 10 KB data, power supply 24 V DC, 14 DI/10 DO/ 2 AI/1 AO integrated Compact CPU, expandable, work memory 12/16 KB program, 10 KB data, power supply 100 V to 230 V AC, 14 DI/10 DO (relay outputs)/ 2 AI/1 AO integrated	6ES7 214-2AD23-0XB0 6ES7 214-2BD23-0XB0	SIM 274 simulator (optional) with 8 terminals for CPU 221/222 6ES7 274-1XF00-0XA0 with 14 terminals for CPU 224/224 XP 6ES7 274-1XH00-0XA0 with 24 terminals for CPU 226 6ES7 274-1XK00-0XA0
CPU 224 XPsi Compact CPU, with current-sinking outputs, expandable, work memory 12/16 KB program, 10 KB data, power supply 24 V DC, 14 DI/10 DO/ 2 AI/1 AO integrated	6ES7 214-2AS23-0XB0	Pluggable terminal block (spare part) With 12 terminals (for CPU 22x) I 6ES7 292-1AE20-0AA0 With 18 terminals (for CPU 224/224 XP) I 6ES7 292-1AG20-0AA0 With 14 terminals (for CPU 226) I 6ES7 292-1AF20-0AA0
CPU 226 Compact CPU, expandable, work memory 16/24 KB program, 10 KB data, power supply 24 V DC, 24 DI/16 DO integrated Compact CPU, expandable, work memory 16/24 KB program, 10 KB data, power supply 100 V to 230 V AC, 24 DI/16 DO integrated, relay outputs	6ES7 216-2AD23-0XB0 6ES7 216-2BD23-0XB0	Intelligent RS 232/PPI multi-master cable For connecting devices with an RS 232 interface to SIMATIC S7-200 or the PPI network; master in the multi-master PPI network 6ES7 901-3CB30-0XA0 Intelligent USB/PPI multi-master cable For connecting devices with an USB interface to SIMATIC S7-200 or the PPI network; master in the multi-master PPI network 6ES7 901-3DB30-0XA0
		MPI cable 5 m; for connecting the S7-200 to MPI 6ES7 901-0BF00-0AA0
		Backplane bus expansion cable I 6ES7 290-6AA20-0XA0 for connecting two rows of modules with double-tier configuration, for CPU 222/224/224 XP/226

I: Subject to export regulations AL: N and ECCN: EAR99H

J: Subject to export regulations AL: N and ECCN: EAR99S

SIMATIC S7-200

Central processing units

CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 224 XPSi, CPU 226

Ordering data	Order No.	Order No.
Optional battery module Optional combined clock and battery module only for CPU 221/222	6ES7 291-8BA20-0XA0 6ES7 297-1AA23-0XA0	
S7-200 programmable controller, system manual for CPU 221/222/224/224 XP/226 and STEP 7 Micro/Win V4 German English French Spanish Italian Chinese	6ES7 298-8FA24-8AH0 6ES7 298-8FA24-8BH0 6ES7 298-8FA24-8CH0 6ES7 298-8FA24-8DH0 6ES7 298-8FA24-8EH0 6ES7 298-8FA24-8FH0	
SIMATIC manual collection J Electronic manuals on DVD, multilingual: 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	6ES7 998-8XC01-8YE0	
SIMATIC manual collection update service for 1 year D Current Manual Collection DVD and the three subsequent updates	6ES7 998-8XC01-8YE2	
		STEP 7 Micro/WIN32 V4 programming software Target system: All CPUs of the SIMATIC S7-200 Requirements: Windows 2000/XP on PG or PC Type of delivery: German, English, French, Spanish, Italian, Chinese; with online documentation Single license J 6ES7 810-2CC03-0YX0 Upgrade Single License ¹⁾ J 6ES7 810-2CC03-0YX3
		PROFIBUS bus connector, IP20 with 90° cable outlet <ul style="list-style-type: none"> Without PG connection 6ES7 972-0BA12-0XA0 With PG connection 6ES7 972-0BB12-0XA0
		PROFIBUS bus connector, IP20 with 35° cable outlet <ul style="list-style-type: none"> Without PG connection 6ES7 972-0BA42-0XA0 with PG connection 6ES7 972-0BB42-0XA0
		PROFIBUS FC standard cable 6XV1 830-0EH10 For connection to PPI; standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m
		RS 485 repeater for PROFIBUS 6ES7 972-0AA02-0XA0

¹⁾ Upgrade for all previous STEP 7-Micro/WIN and STEP 7-Micro/DOS versions

D: Subject to export regulations AL: N and ECCN: 5D992

J: Subject to export regulations AL: N and ECCN: EAR99S

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Overview SIPLUS CPU 221



- The clever compact solution
- With 10 inputs/outputs on board
- Cannot be expanded

Note:

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

SIPLUS CPU 221		
Order number	6AG1 211-0AA23-2XB0	6AG1 211-0BA23-2XB0
Order No. based on	6ES7 211-0AA23-0XB0	6ES7 211-0BA23-0XB0
Ambient temperature range	-25 ... +70 °C; -25 ... +55 °C (for applications with cUL approval)	
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	
Compliant with the standards for electronic equipment used on railway rolling stock (EN 50155, temperature T1, category 1).	Yes	Yes
Approvals	CE, cUL	

Ambient conditions

Relative humidity	5 ... 100 % Condensation permissible	
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)	
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}	
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾	
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K	

¹⁾ ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH₃ < 49 ppm; O₃ < 0.1 ppm; NOX < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH₃ < 247 ppm; O₃ < 1.0 ppm; NOX < 10.4 ppm

²⁾ The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

The technical documentation on SIPLUS can be found here:

www.siemens.com/siplus-extreme

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Overview SIPLUS CPU 222



- The superior compact solution
- With 14 input/outputs on board
- Expandable with up to 2 expansion modules

Note:

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

SIPLUS CPU 222		
Order number	6AG1 212-1AB23-2XB0	6AG1 212-1BB23-2XB0
Order No. based on	6ES7 212-1AB23-0XB0	6ES7 212-1BB23-0XB0
Ambient temperature range	-25 ... +70 °C; -25 ... +55 °C (for applications with cUL approval)	
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	
Compliant with the standards for electronic equipment used on railway rolling stock (EN 50155, temperature T1, category 1).	Yes	Yes
Approvals	CE, cUL	

Ambient conditions

Relative humidity	5 ... 100 % Condensation permissible	
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)	
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}	
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾	
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K	

1) ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH < 49 ppm; O₃ < 0.1 ppm; NO_x < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH < 247 ppm; O₃ < 1.0 ppm; NO_x < 10.4 ppm

2) The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

The technical documentation on SIPLUS can be found here:

www.siemens.com/siplus-extreme

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Overview SIPLUS CPU 224



- The compact high-performance CPU
- With 24 input/outputs on board
- Expandable with up to 7 expansion modules

Note:

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

SIPLUS CPU 224		
Order number	6AG1 214-1AD23-2XB0	6AG1 214-1BD23-2XB0
Order No. based on	6ES7 214-1AD23-0XB0	6ES7 214-1BD23-0XB0
Ambient temperature range	-25 ... +70 °C; -25 ... +55 °C (for applications with cUL approval)	
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	
Compliant with the standards for electronic equipment used on railway rolling stock (EN 50155, temperature T1, category 1).	Yes	Yes
Approvals	CE, cUL	

Ambient conditions

Relative humidity	5 ... 100 % Condensation permissible	
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)	
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}	
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾	
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K	

¹⁾ ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH < 49 ppm; O₃ < 0.1 ppm; NO_x < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH < 247 ppm; O₃ < 1.0 ppm; NO_x < 10.4 ppm

²⁾ The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

The technical documentation on SIPLUS can be found here:

www.siemens.com/siplus-extreme

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Overview SIPLUS CPU 224 XP



- The power CPU
- With 24 digital and 3 analog I/Os onboard
- Expandable with up to 7 expansion modules

Note:

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

SIPLUS CPU 224 XP		
Order number	6AG1 214-2AD23-2XB0	6AG1 214-2BD23-2XB0
Order No. based on	6ES7 214-2AD23-0XB0	6ES7 214-2BD23-0XB0
Ambient temperature range	-25 ... +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	
Compliant with the standards for electronic equipment used on railway rolling stock (EN 50155, temperature T1, category 1).	No	No
Approvals	CE	
Ambient conditions		
Relative humidity	5 ... 100 % Condensation permissible	
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)	
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}	
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾	
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K	

¹⁾ ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH₃ < 49 ppm; O₃ < 0.1 ppm; NOX < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH₃ < 247 ppm; O₃ < 1.0 ppm; NOX < 10.4 ppm

²⁾ The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

The technical documentation on SIPLUS can be found here:

www.siemens.com/siplus-extreme

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Overview SIPLUS CPU 226



- The power pack for larger technical tasks
- With additional PPI connection for even more flexibility and communication facilities
- With 40 input/outputs on board
- Expandable with up to 7 expansion modules

Note:

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

SIPLUS CPU 226		
Order number	6AG1 216-2AD23-2XB0	6AG1 216-2BD23-2XB0
Order No. based on	6ES7 216-2AD23-0XB0	6ES7 216-2BD23-0XB0
Ambient temperature range	-25 ... +70 °C; -25 ... +55 °C (for applications with cUL approval)	
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	
Compliant with the standards for electronic equipment used on railway rolling stock (EN 50155, temperature T1, category 1).	Yes	Yes
Approvals	CE, cUL	

Ambient conditions

Relative humidity	5 ... 100 % Condensation permissible	
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)	
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}	
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾	
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K	

1) ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH < 49 ppm; O₃ < 0.1 ppm; NO_x < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH < 247 ppm; O₃ < 1.0 ppm; NO_x < 10.4 ppm

2) The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

The technical documentation on SIPLUS can be found here:

www.siemens.com/siplus-extreme

SIMATIC S7-200

SIPLUS central processing units

SIPLUS CPU 221, CPU 222, CPU 224, CPU 224 XP,
CPU 226

Ordering data	Order No.	Order No.	
SIPLUS CPU 221 (extended temperature and media exposure) Compact-CPU, work memory 4 KByte, power supply DC 24 V, 6 DE/4 DA integrated	6AG1 211-0AA23-2XB0	SIPLUS CPU 224 XP (extended temperature range and media exposure) Compact CPU, expandable, work memory 12/16 KB for program, 10 KB for data, 24 V DC supply voltage, 14 DI/10 DO/2 AI/1 AO integrated	6AG1 214-2AD23-2XB0
Compact-CPU, work memory 4 KByte, power supply AC 100 to 230 V, 6 DE/4 DA integrated, relay outputs	6AG1 211-0BA23-2XB0	Compact CPU, expandable, work memory 12/16 KB for program, 10 KB for data, 100 to 230 V AC supply voltage, 14 DI/10 DO (relay outputs)/2 AI/1 AO integrated	6AG1 214-2BD23-2XB0
SIPLUS CPU 222 (extended temperature range and media exposure)	6AG1 212-1AB23-2XB0	SIPLUS CPU 226 (extended temperature range and media exposure)	
Compact CPU, expandable, 4 KB work memory, 24 V DC supply voltage, 8 DI/6 DO integrated	6AG1 212-1BB23-2XB0	Compact CPU, expandable, work memory 16/24 KB for program, 10 KB for data, 24 V DC supply voltage, 24 DI/16 DO integrated	6AG1 216-2AD23-2XB0
SIPLUS CPU 224 (extended temperature range and media exposure)		Compact CPU, expandable, work memory 16/24 KB for program, 10 KB for data, 100-230 V AC supply voltage, 24 DI/16 DO integrated, relay outputs	6AG1 216-2BD23-2XB0
Compact CPU, expandable, work memory 8/12 KB for program and 8 KB for data, 24 V DC supply voltage, 14 DI/10 DO integrated	6AG1 214-1AD23-2XB0	Accessories	
Compact CPU, expandable, work memory 8/12 KB for program, 8 KB for data, 100-230 V AC supply voltage, 14 DI/10 DO integrated, relay outputs	6AG1 214-1BD23-2XB0	SIPLUS Upmiter upstream device	6AG1 203-1AA00-2AA0
		for reliable operation at the battery of combustion engines	
		Additional accessories	See SIMATIC S7-200 CPU 222 central processing unit, page 3/22

H: Subject to export regulations AL: 91999 and ECCN: EAR99H

L: Subject to export regulations AL: 91999 and ECCN: N