

**SIMATIC S7-1200 basic controller**

Central processing units  
Standard CPUs

**CPU 1211C****Overview**

- The clever compact solution
- With 10 integral input/outputs
- Expandable by:
  - 1 signal board (SB) or communication board (CB)
  - Max. 3 communication modules (CM)

**Technical specifications**

Article number	<b>6ES7211-1BE40-0XB0</b> CPU 1211C, AC/DC/RELAY, 6DI/4DO/2AI	<b>6ES7211-1AE40-0XB0</b> CPU 1211C, DC/DC/DC, 6DI/4DO/2AI	<b>6ES7211-1HE40-0XB0</b> CPU 1211C, DC/DC/RELAY, 6DI/4DO/2AI
<b>Product type designation</b>			
<b>General information</b>			
<b>Engineering with</b>			
• Programming package	STEP 7 V13 SP1 or higher	STEP 7 V13 SP1 or higher	STEP 7 V13 SP1 or higher
<b>Supply voltage</b>			
Rated value (DC)		Yes	Yes
• 24 V DC			
Rated value (AC)	Yes		
• 120 V AC	Yes		
• 230 V AC	Yes		
<b>Encoder supply</b>			
<b>24 V encoder supply</b>			
• 24 V		L+ minus 4 V DC min.	L+ minus 4 V DC min.
<b>Power losses</b>			
Power loss, typ.	10 W	8 W	8 W
<b>Memory</b>			
<b>Work memory</b>			
• Integrated	50 kbyte	50 kbyte	50 kbyte
<b>Load memory</b>			
• Integrated	1 Mbyte	1 Mbyte	1 Mbyte
• Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card	with SIMATIC memory card	with SIMATIC memory card
<b>Backup</b>			
• without battery	Yes	Yes	Yes
<b>CPU processing times</b>			
for bit operations, typ.	0.085 µs; / instruction	0.085 µs; / instruction	0.085 µs; / instruction
for word operations, typ.	1.7 µs; / instruction	1.7 µs; / instruction	1.7 µs; / instruction
for floating point arithmetic, typ.	2.5 µs; / instruction	2.5 µs; / instruction	2.5 µs; / instruction
<b>Data areas and their retentivity</b>			
<b>Flag</b>			
• Number, max.	4 kbyte; Size of bit memory address area	4 kbyte; Size of bit memory address area	4 kbyte; Size of bit memory address area
<b>Process image</b>			
• Inputs, adjustable	1 kbyte	1 kbyte	1 kbyte
• Outputs, adjustable	1 kbyte	1 kbyte	1 kbyte

**Technical specifications** (continued)

Article number	<b>6ES7211-1BE40-0XB0</b> CPU 1211C, AC/DC/RELAY, 6DI/4DO/2AI	<b>6ES7211-1AE40-0XB0</b> CPU 1211C, DC/DC/DC, 6DI/4DO/2AI	<b>6ES7211-1HE40-0XB0</b> CPU 1211C, DC/DC/RELAY, 6DI/4DO/2AI
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time clock)	Yes	Yes	Yes
<b>Digital inputs</b>			
Number of digital inputs	6; Integrated	6; Integrated	6; Integrated
• of which, inputs usable for technological functions	3; HSC (High Speed Counting)	3; HSC (High Speed Counting)	3; HSC (High Speed Counting)
<b>Digital outputs</b>			
Number of digital outputs	4; Relays	4	4; Relays
• of which high-speed outputs		4; 100 kHz Pulse Train Output	
<b>Analog inputs</b>			
Integrated channels (AI)	2; 0 to 10 V	2; 0 to 10 V	2; 0 to 10 V
<b>Input ranges</b>			
• Voltage	Yes	Yes	Yes
<b>1st interface</b>			
Interface type	PROFINET	PROFINET	PROFINET
Physics	Ethernet	Ethernet	Ethernet
<b>Functionality</b>			
• PROFINET IO Device	Yes	Yes	Yes
• PROFINET IO Controller	Yes	Yes	Yes
<b>Communication functions</b>			
<b>S7 communication</b>			
• supported	Yes	Yes	Yes
<b>Open IE communication</b>			
• TCP/IP	Yes	Yes	Yes
• ISO-on-TCP (RFC1006)	Yes	Yes	Yes
• UDP	Yes	Yes	Yes
<b>Web server</b>			
• supported	Yes	Yes	Yes
<b>Number of connections</b>			
• overall	16; dynamically	16; dynamically	16; dynamically
<b>Integrated Functions</b>			
Number of counters	3	3	3
Counter frequency (counter) max.	100 kHz	100 kHz	100 kHz
Frequency meter	Yes	Yes	Yes
controlled positioning	Yes	Yes	Yes
PID controller	Yes	Yes	Yes
Number of alarm inputs	4	4	4
Number of pulse outputs		4	
Limit frequency (pulse)		100 kHz	
<b>Ambient conditions</b>			
<b>Ambient temperature in operation</b>			
• Min.	-20 °C	-20 °C	-20 °C
• max.	60 °C	60 °C	60 °C
<b>Pollutant concentrations</b>			
- SO <sub>2</sub> at RH < 60% without condensation	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free
<b>Configuration</b>			
<b>programming</b>			
<b>Programming language</b>			
- LAD	Yes	Yes	Yes
- FBD	Yes	Yes	Yes
- SCL	Yes	Yes	Yes
<b>Dimensions</b>			
Width	90 mm	90 mm	90 mm
Height	100 mm	100 mm	100 mm
Depth	75 mm	75 mm	75 mm
<b>Weights</b>			
Weight, approx.	420 g	370 g	380 g

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**Ordering data****Article No.****Article No.****CPU 1211C**

**Compact CPU, AC/DC/relay;**  
integral program/data memory  
50 KB, load memory 1 MB;  
wide-range power supply  
85 ... 264 V AC;  
Boolean execution times  
0.1 µs per operation;  
6 digital inputs,  
4 digital outputs (relays),  
2 analog inputs;  
expandable by up to  
3 communication modules and  
1 signal board/communication  
board;  
digital inputs can be used  
as HSC at 100 kHz

**6ES7211-1BE40-0XB0**

**Compact CPU, DC/DC/DC;**  
integrated program/data memory  
50 KB, load memory 1 MB;  
power supply 24 V DC;  
Boolean execution times  
0.1 µs per operation;  
6 digital inputs,  
4 digital outputs,  
2 analog inputs;  
expandable by up to  
3 communication modules and  
1 signal board/communication  
board;  
digital inputs can be used  
as HSC at 100 kHz,  
24 V DC digital outputs can be  
used as pulse outputs (PTO) or  
pulse-width modulated outputs  
(PWM) at 100 kHz

**6ES7211-1AE40-0XB0**

**Compact CPU, DC/DC/relay;**  
integrated program/data memory  
50 KB, load memory 1 MB;  
power supply 24 V DC;  
Boolean execution times  
0.1 µs per operation;  
6 digital inputs,  
4 digital outputs (relays),  
2 analog inputs;  
expandable by up to  
3 communication modules and  
1 signal board/communication  
board;  
digital inputs can be used  
as HSC at 100 kHz

**6ES7211-1HE40-0XB0****SB 1221 signal board**

4 inputs, 5 V DC, 200 kHz

**6ES7221-3AD30-0XB0**

4 inputs, 24 V DC, 200 kHz

**6ES7221-3BD30-0XB0****SB 1222 signal board**

4 outputs, 5 V DC, 0.1 A, 200 kHz

**6ES7222-1AD30-0XB0**

4 outputs, 24 V DC, 0.1 A, 200 kHz

**6ES7222-1BD30-0XB0****SB 1223 signal board**

2 inputs, 24 V DC,  
IEC type 1 current sinking;  
2 x 24 V DC transistor outputs,  
0.5 A, 5 W;  
can be used as HSC  
at up to 30 kHz

**6ES7223-0BD30-0XB0**

2 inputs, 5 V DC, 200 kHz  
2 outputs 5 V DC, 0.1 A, 200 kHz

**6ES7223-3AD30-0XB0**

2 inputs, 24 V DC, 200 kHz  
2 outputs 24 V DC, 0.1 A, 200 kHz

**6ES7223-3BD30-0XB0****SB 1231 signal board**

1 analog input, ±10 V with 12 bits or  
0 ... 20 mA with 11 bits

**6ES7231-4HA30-0XB0****Thermocouple signal board  
SB 1231**

1 input +/- 80 mV, resolution 15 bits  
+ sign, thermocouples type J, K

**6ES7231-5QA30-0XB0****RTD signal board SB 1231**

1 input for resistance temperature  
sensors Pt 100, Pt 200, Pt 500,  
Pt 1000, resolution 15 bits + sign

**6ES7231-5PA30-0XB0****SB 1232 signal board**

1 analog output, ±10 V with 12 bits  
or 0 to 20 mA with 11 bits

**6ES7232-4HA30-0XB0****Communication board  
CB 1241 RS 485**

for point-to-point connection,  
with 1 RS 485 interface

**6ES7241-1CH30-1XB0****Digital input simulator  
Simulator Module SIM 1274  
(optional)**

8 input switches,  
for CPU 1211C / CPU 1212C

**6ES7274-1XF30-0XA0****Analog input simulator  
Simulator Module SIM 1274  
(optional)**

2 potentiometers

**6ES7274-1XA30-0XA0**

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CPU 1211C

Ordering data	Article No.	Article No.
<b>SIMATIC Memory Card (optional)</b>		<b>STEP 7 Professional / Basic V13 SP1</b>
4 MB	<b>6ES7954-8LC02-0AA0</b>	Target system: SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC
12 MB	<b>6ES7954-8LE02-0AA0</b>	Requirement: Windows 7 Professional SP1 (64-bit), Windows 7 Enterprise SP1 (64-bit), Windows 7 Ultimate SP1 (64-bit), Windows 8.1 (64-bit), Windows 8.1 Professional (64-bit), Windows 8.1 Enterprise (64-bit), Windows Server 2008 R2 StdE (full installation), Windows Server 2012 StdE (full installation)
24 MB	<b>6ES7954-8LF02-0AA0</b>	Available in: German, English, Chinese, Italian, French, Spanish
256 MB	<b>6ES7954-8LL02-0AA0</b>	STEP 7 Professional V13 SP1, floating license
2 GB	<b>6ES7954-8LP01-0AA0</b>	STEP 7 Professional V13 SP1, floating license, software download incl. license key <sup>1)</sup>
<b>Terminal block (spare part)</b>		Email address required for delivery
for CPU 1211C/1212C		STEP 7 Basic V13 SP1, floating license
For DI, with 14 screws, tin-plated; 4 units	<b>6ES7292-1AH30-0XA0</b>	STEP 7 Basic V13 SP1, floating license, software download incl. license key <sup>1)</sup>
For DO, with 8 screws, tin-plated; 4 units	<b>6ES7292-1AP30-0XA0</b>	Email address required for delivery
For AI, with 3 screws, tin-plated; 4 units	<b>6ES7292-1BC30-0XA0</b>	
<b>RJ45 cable grip</b>		
4 units per pack		
Single port	<b>6ES7290-3AA30-0XA0</b>	
<b>Front flap set (spare part)</b>		
for CPU 1211C/1212C	<b>6ES7291-1AA30-0XA0</b>	

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