

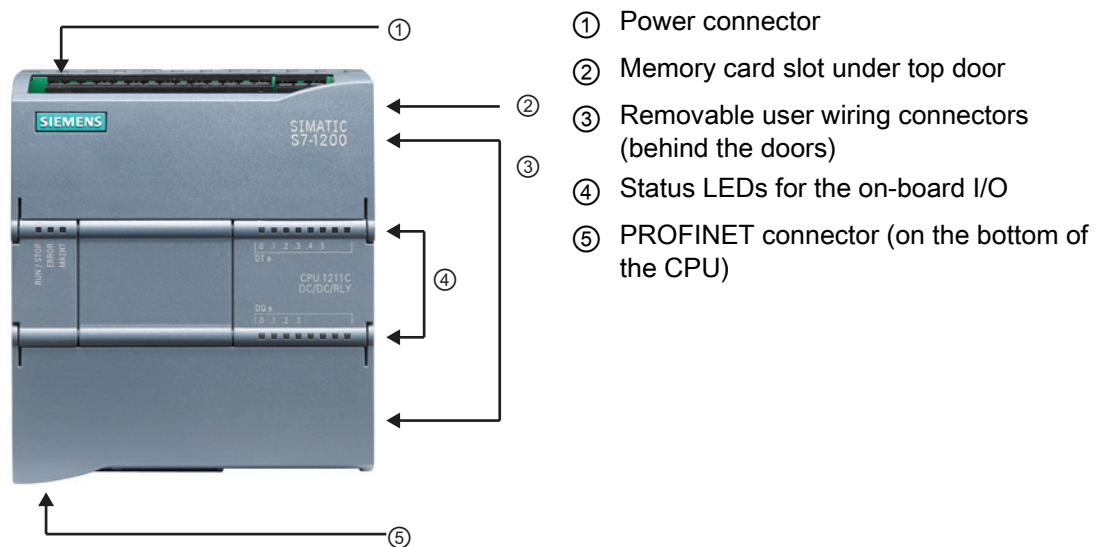
Product overview

1.1 Introducing the S7-1200 PLC

The S7-1200 controller provides the flexibility and power to control a wide variety of devices in support of your automation needs. The compact design, flexible configuration, and powerful instruction set combine to make the S7-1200 a perfect solution for controlling a wide variety of applications.

The CPU combines a microprocessor, an integrated power supply, input and output circuits, built-in PROFINET, high-speed motion control I/O, and on-board analog inputs in a compact housing to create a powerful controller. After you download your program, the CPU contains the logic required to monitor and control the devices in your application. The CPU monitors the inputs and changes the outputs according to the logic of your user program, which can include Boolean logic, counting, timing, complex math operations, and communications with other intelligent devices.

The CPU provides a PROFINET port for communication over a PROFINET network. Additional modules are available for communicating over PROFIBUS, GPRS, RS485 or RS232 networks.



Several security features help protect access to both the CPU and the control program:

- Every CPU provides password protection (Page 164) that allows you to configure access to the CPU functions.
- You can use "know-how protection" (Page 165) to hide the code within a specific block.
- You can use copy protection (Page 166) to bind your program to a specific memory card or CPU.

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Table 1- 1 Comparing the CPU models

Feature		CPU 1211C	CPU 1212C	CPU 1214C	CPU 1215C
Physical size (mm)		90 x 100 x 75	90 x 100 x 75	110 x 100 x 75	130 x 100 x 75
User memory	Work	30 Kbytes	50 Kbytes	75 Kbytes	100 Kbytes
	Load	1 Mbyte	1 Mbyte	4 Mbytes	4 Mbytes
	Retentive	10 Kbytes	10 Kbytes	10 Kbytes	10 Kbytes
Local on-board I/O	Digital	6 inputs/4 outputs	8 inputs/6 outputs	14 inputs/10 outputs	14 inputs/10 outputs
	Analog	2 inputs	2 inputs	2 inputs	2 inputs / 2 outputs
Process image size	Inputs (I)	1024 bytes	1024 bytes	1024 bytes	1024 bytes
	Outputs (Q)	1024 bytes	1024 bytes	1024 bytes	1024 bytes
Bit memory (M)		4096 bytes	4096 bytes	8192 bytes	8192 bytes
Signal module (SM) expansion		None	2	8	8
Signal board (SB), Battery board (BB), or communication board (CB)		1	1	1	1
Communication module (CM) (left-side expansion)		3	3	3	3
High-speed counters	Total	3 built-in I/O, 5 with SB	4 built-in I/O, 6 with SB	6	6
	Single phase	3 at 100 kHz SB: 2 at 30 kHz	3 at 100 kHz 1 at 30 kHz SB: 2 at 30 kHz	3 at 100 kHz 3 at 30 kHz	3 at 100 kHz 3 at 30 kHz
	Quadrature phase	3 at 80 kHz SB: 2 at 20 kHz	3 at 80 kHz 1 at 20 kHz SB: 2 at 20 kHz	3 at 80 kHz 3 at 20 kHz	3 at 80 kHz 3 at 20 kHz
Pulse outputs ¹		4	4	4	4
Memory card		SIMATIC Memory card (optional)			
Real time clock retention time		20 days, typ. / 12 day min. at 40 degrees C (maintenance-free Super Capacitor)			
PROFINET		1 Ethernet communication port			2 Ethernet communication ports
Real math execution speed		2.3 µs/instruction			
Boolean execution speed		0.08 µs/instruction			

¹ For CPU models with relay outputs, you must install a digital signal board (SB) to use the pulse outputs.

Each CPU provides dedicated HMI connections to support up to 3 HMI devices. The total number of HMI is affected by the types of HMI panels in your configuration. For example, you could have up to three SIMATIC Basic panels connected to your CPU, or you could have up to two SIMATIC Comfort panels with one additional Basic panel.

The different CPU models provide a diversity of features and capabilities that help you create effective solutions for your varied applications. For detailed information about a specific CPU, see the technical specifications (Page 699).