

**22/01/2025**

## **Delivery release new SIMATIC Controller Generation S7-1200 G2**

This is the delivery approval for the new SIMATIC S7-1200 G2 control generation.  
The SIMATIC S7-1200 G2 is the designated successor of the SIMATIC S7-1200.



SIMATIC S7-1200 G2

The major improvements of the new SIMATIC S7-1200 G2 controller generation are:

- Saving space on the DIN Rail
- Increased communication and PLC processing performance
  - Faster execution time
  - Support for Real-Time PROFINET and Isochronous Real-Time PROFINET communication
  - Support for Media Redundancy for Planned Duplication (MRPD) and Media Redundancy Protocol (MRP)
  - Support for 31 PROFINET-Devices
  - Dual PROFINET ports for all CPU models
  - 8 HSCs (High Speed Counters)
  - 8 pulse generators for use as PTOs (Pulse Train Outputs) or for PWM (Pulse Width Modulation)
- More memory
  - Up to 300 kB of program memory and 750 kB of data memory
  - 8 MB of internal load memory
  - 20 kB of retentive memory
- Improved scalability for functional machine safety (Failsafe CPU derivatives)
  - PROFIsafe F-Host functionality allowing to use decentralized F-Devices
- Efficient motion control functionality - supports the Technology objects based on SIMATIC Motion Library Version 8.0:
  - TO\_SpeedAxis
  - TO\_PositioningAxis
  - TO\_SynchronousAxis
  - TO\_ExternalEncoder
  - TO\_OutputCam
  - TO\_CamTrack
  - TO\_MeasuringInput
  - TO\_Cam
  - TO\_Kinematics
  - Note: [Resources and more details about the feature set for Motion Control](#)
- SIMATIC Controller Profiling
  - Analyzing and evaluating the runtime behavior of the user program in depth
  - Analyzing and evaluating all relevant information graphically Google Chrome
  - Data reading from the controller and generating a compressed trace file in JSON format for analysis with the Chrome browser
  - see SIOS entry: [109750245](#)

- Enhanced security functionality
  - System logging (Event log)
  - Support for users and roles
- Wide range of different digital and analog expansion modules
- Up to two Signal Boards plugging right into the CPU, without increasing the PLC footprint
- Signal modules extending the I/O count to support more demanding applications
- User-configurable alarms
- Support for DHCP and DNS
- Power budget calculation tool in TIA Portal
- Near Field Communication (NFC) functionality
  - Ability to diagnose and parameterize a CPU using the S7-1200 NFC app
  - Link to App Store: [SIMATIC S7-1200 G2 NFC](#)



SIMATIC S7-1200 G2 NFC

- New web server appearance (API) - most recent technology identical to SIMATIC S7-1500 CPU's

#### SIMATIC S7-1200 G2 Controller

Each performance stage of the CPUs available at market introduction (CPU 1212C / CPU 1214C) offer many features and functions that will help our customers to create effective automation solutions for their applications. The list below is a summary of the salient features of SIMATIC S7-1200 G2:

- Integrated power supply either as wide-range AC or as DC supply (85 to 264 V AC or 24 V DC)
- Integrated digital outputs either 24V DC or relay
- Integrated 24V DC digital inputs
- Modularity and scalability by expansion with analog or digital signals directly on the CPU via Signal Board (while maintaining the CPU footprint)
- Modularity and scalability with a multitude of analog and digital input and output signals with signal modules
- Optional memory expansion (SIMATIC Memory Card)
- Integrated real-time clock
- Removable Push-In terminals on all components

CPU type		Article number	Description
CPU 1212C	DC/DC/DC	6ES7212-1AG50-0XB0	Compact CPU 1212C onboard I/O: 8x DI 24 V DC; 6x DQ; Memory: program 150 kB, data: 500 kB
	AC/DC/RLY	6ES7212-1BG50-0XB0	
	DC/DC/RLY	6ES7212-1HG50-0XB0	
CPU 1212FC	DC/DC/DC	6ES7212-1AF50-0XB0	Failsafe Compact CPU 1212FC onboard I/O: 8x DI 24 V DC; 6x DQ; Memory: program 200 kB, data: 500 kB
	DC/DC/RLY	6ES7212-1HF50-0XB0	
CPU 1214C	DC/DC/DC	6ES7214-1AH50-0XB0	Compact CPU 1214C onboard I/O: 14x DI 24 V DC; 10x DQ; Memory: program 250 kB, data: 750 kB
	AC/DC/RLY	6ES7214-1BH50-0XB0	
	DC/DC/RLY	6ES7214-1HH50-0XB0	
CPU 1214FC	DC/DC/DC	6ES7214-1AF50-0XB0	Failsafe Compact CPU 1214FC onboard I/O: 14x DI 24 V DC; 10x DQ; Memory: Program 300 kB, data: 750 kB
	DC/DC/RLY	6ES7214-1HF50-0XB0	

Digital Signal modules		Article number
SM 1221	DI 16x 24 V DC	6ES7221-1BH50-0XB0
SM 1222	DQ 16x RLY 2.0 A	6ES7222-5HH50-0XB0
	DQ 16x 24 V DC 0.5A	6ES7222-5BH50-0XB0
SM 1223	DI 8x 24 V DC/ DQ 8x RLY 2.0 A	6ES7223-5PH50-0XB0
	DI 8x 24 V DC/ DQ 8x 24 V DC 0.5A	6ES7223-5BH50-0XB0

Digital Signal boards		Article number
SB 1221	DI 8x 24 V DC Sink/Source 100 kHz	6ES7221-3BF50-0XB0
SB 1222	DQ 8x 24 V DC 100 kHz	6ES7222-5BF50-0XB0
SB 1223	DI 4x 24 V DC, DQ 4x 24 V DC, 100 kHz	6ES7223-7BF50-0XB0
	DI 4x 5 V DC, DQ 4x 5 V DC, 200 kHz	6ES7223-7AF50-0XB0

Analog Signal modules		Article number
SM 1231	AI 8 x 14 bit ADC ( $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , oder 0-20 mA/4-20 mA)	6ES7231-4HF50-0XB0
SM 1232	AQ 8 x 14 bit DAC ( $\pm 10V$ , 0-20mA, oder 4-20mA)	6ES7232-4HF50-0XB0
SM 1233	AI 4 x 14 bit ADC ( $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , or 0-20 mA/4-20 mA) AQ 4 x 14 bit DAC ( $\pm 10V$ , 0-20mA, oder 4-20mA)	6ES7233-4HF50-0XB0

Analog Signal boards		Article number
SB 1231	AI 4x 14 bit ADC ( $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , oder 0-20 mA/4-20 mA)	6ES7231-4HD50-0XB0
SB 1232	AQ 4x 14 bit DAC ( $\pm 10V$ , 0-20mA, oder 4-20mA)	6ES7232-4HD50-0XB0
SB 1233	AI 2x 14 bit ADC ( $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , oder 0-20 mA/4-20 mA) AQ 2x 14 bit DAC ( $\pm 10V$ , 0-20mA, or 4-20mA)	6ES7233-4HD50-0XB0

### Engineering

The new SIMATIC S7-1200 G2 can only be programmed with TIA Portal Version V20 (STEP 7 Basic / STEP 7 Professional) and higher. Programming a SIMATIC S7-1200 G2 CPU with previous STEP 7 versions is not supported.

Together with TIA Portal Version V20 there is only one Engineering Package for Standard and Failsafe S7-1200 G2 CPU.

### SIMATIC Memory Card

A SIMATIC Memory card can be used to load a STEP 7 program, perform a firmware update, and store user files, as well as to expand CPU functionality for example long term measurements (tracing).

### Compatibility

The SIMATIC S7-1200 G2 family of controllers is not compatible in hardware with the existing SIMATIC S7-1200 family of controllers. Existing S7-1200 PLC Code can easily be converted towards the new generation, with minor adaptations.

### Further information

- Approvals:
  - All marine approvals are still going through the approval process and will be made available via SIOS as soon as they are available.
  - KCC approval is still in the approval process and is unlikely to be available at the planned start of delivery of the hardware.
  - When ordering the respective CPU, it is therefore imperative to check to what extent use is possible without these approvals.
  - After the approvals have been granted, the functional level of the CPUs will be increased and communicated in SIOS.
- [Web page S7-1200 G2](#)
- [System manual](#)
- Power supply module: The delivery of the single-phase power module SITOP PM 1207 with 24V/5A in the design of the new S7-1200 G2 will follow soon. Article number: [6EP3333-4SB00-3AX0](#)

### Training

With our training courses on SITRAIN access, the digital learning platform for industry, you will learn how to make the most of the new S7-1200 G2 hardware and its innovative features. Expand your knowledge online, flexibly and individually and always stay up to date with the latest technology. More information can be found here: [SITRAIN access](#)

Link to this document:

<https://support.industry.siemens.com/cs/document/109973175/delivery-release-new-simatic-controller-generation-s7-1200-g2?dti=0&lc=en-WW>

Link to an example application:

<https://support.industry.siemens.com/cs/document/109977573/simatic-s7-1200-g2-flying-saw-flyingsawbasic-?dti=0&lc=en-WW>