

SIMATIC S7-1200 G2

Migration overview



Notes on the document

This document provides an initial overview of the SIMATIC S7-1200 G2 components currently available and shows how existing SIMATIC S7-1200 components can be converted to the new controller generation.

Please note that further modules will be available during the calendar year 2025 (details can be found in the [Roadmap](#)):

- Temperature modules
- Communication modules
- Fail-safe input/output modules

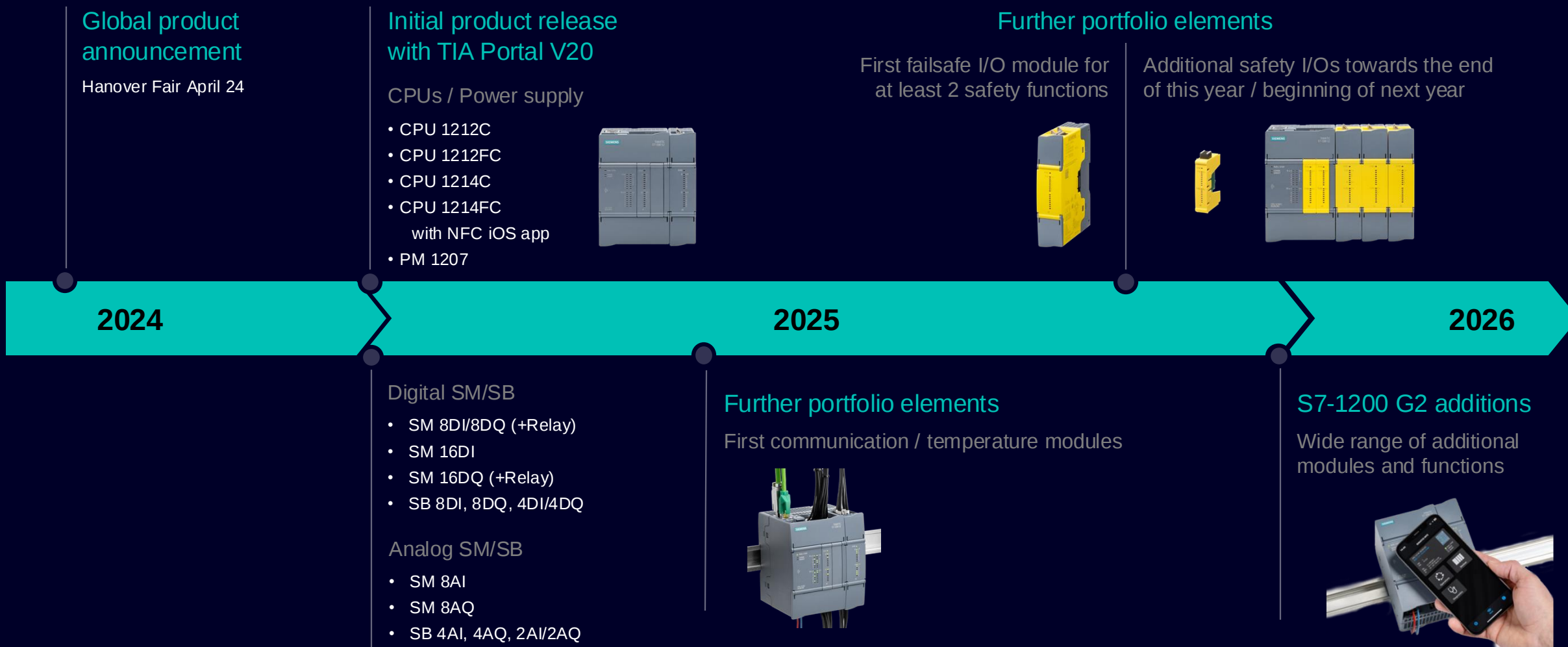
In addition, the following functions will only be available in the next firmware version for SIMATIC S7-1200 G2:

- OPC UA
- Configuration control
- PTO interface for motion control (technology objects with HSC and PTO)



SIMATIC S7-1200 G2

Roadmap – Summary and Outlook



Migration option

SIMATIC S7-1200 to SIMATIC S7-1200 G2: CPU 1212

S7-1200

CPU Type	CPU 1211C	CPU 1212C	CPU 1212FC
Interfaces			
Program memory/data memory	75 kB	100 kb	150 kB
Bit performance (ns)	85	85	85
Integrated DI/DO	6/4	8/6	8/6
Integrated AI/AO	2/-	2/-	2/-
HSC	6	6	6
Width (mm)	90	90	90



S7-1200 G2

CPU 1212C	CPU 1212FC
	
150/500 kB	200/500 kB
40	40
8/6	8/6
Optional SB	Optional SB
8	8
70	70

 PROFINET/IE

Migration option

SIMATIC S7-1200 to SIMATIC S7-1200 G2: CPU 1214

S7-1200

CPU Type	CPU 1214C	CPU 1214FC	CPU 1215C	CPU 1215FC	CPU 1217C
Interfaces					
Program memory/data memory	150 kB	200 kB	200 kB	250 kB	250 kB
Bit performance (ns)	85	85	85	85	85
Integrated DI/DO	14/10	14/10	14/10	14/10	14/10
Integrated AI/AO	2/-	2/-	2/2	2/2	2/2
HSC	6	6	6	6	6
Width (mm)	110	110	130	130	150

S7-1200 G2

CPU 1214C	CPU 1214FC
	
250/750 kB	300/750 kB
40	40
14/10	14/10
Optional SB	Optional SB
8	8
80	80



 PROFINET/IE

Power supply



S7-1200	
Designation	Order number
PM1207/1AC/DC24V/2.5A	6EP1332-1SH71

S7-1200 G2	
Order number	Designation
6EP3333-4SB00-3AX0	PM 1207/1AC/DC24V/5 A
6EP3333-4SC00-3AX0	PM 1207/1AC/DC24V/5 A (Ex)

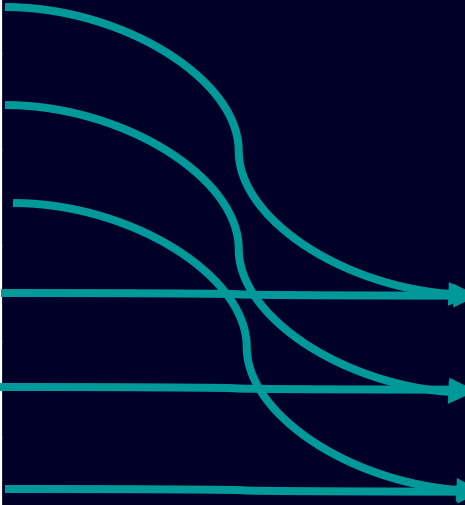


CPU modules „small“



S7-1200	
Designation	Order number
CPU 1211C, DC/DC/DC, 6DI/4DO/2AI	6ES7211-1AE40-0XB0
CPU 1211C, AC/DC/Relays, 6DI/4DO/2AI	6ES7211-1BE40-0XB0
CPU 1211C, DC/DC/Relays, 6DI/4DO/2AI	6ES7211-1HE40-0XB0
CPU 1212C, DC/DC/DC, 8DI/6DO/2AI	6ES7212-1AE40-0XB0
CPU 1212C, AC/DC/Relays, 8DI/6DO/2AI	6ES7212-1BE40-0XB0
CPU 1212C, DC/DC/Relays, 8DI/6DO/2AI	6ES7212-1HE40-0XB0

S7-1200 G2	
Order number	Designation
6ES7212-1AG50-0XB0	CPU 1212C, DC/DC/DC, 8DI/6DO
6ES7212-1BG50-0XB0	CPU 1212C, AC/DC/Relays, 8DI/6DO
6ES7212-1HG50-0XB0	CPU 1212C, DC/DC/Relays, 8DI/6DO

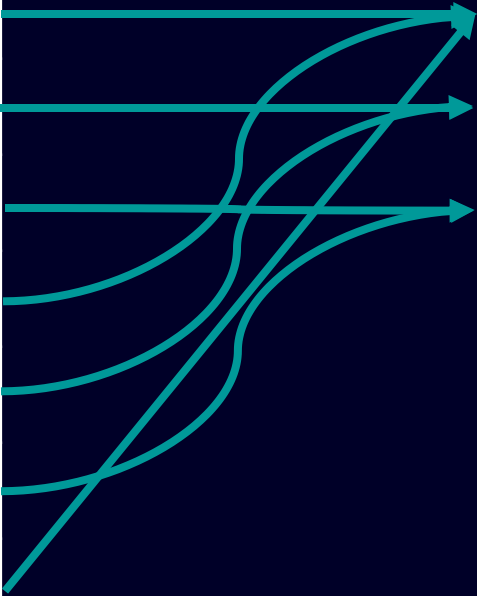


CPU modules „large“



S7-1200	
Designation	Order number
CPU 1214C, DC/DC/DC, 14DI/10DO/2AI	6ES7214-1AG40-0XB0
CPU 1214C, AC/DC/Relays, 14DI/10DO/2AI	6ES7214-1BG40-0XB0
CPU 1214C, DC/DC/Relays, 14DI/10DO/2AI	6ES7214-1HG40-0XB0
CPU 1215C, DC/DC/DC, 14DI/10DO/2AI/2AO	6ES7215-1AG40-0XB0
CPU 1215C, AC/DC/Relays, 14DI/10DO/2AI/2AO	6ES7215-1BG40-0XB0
CPU 1215C, DC/DC/Relays, 14DI/10DO/2AI/2AO	6ES7215-1HG40-0XB0
CPU 1217C, DC/DC/DC, 14DI/10DO/2AI/2AO	6ES7217-1AG40-0XB0

S7-1200 G2	
Order number	Designation
6ES7214-1AH50-0XB0	CPU 1214C, DC/DC/DC, 14DI/10DO
6ES7214-1BH50-0XB0	CPU 1214C, AC/DC/Relays, 14DI/10DO
6ES7214-1HH50-0XB0	CPU 1214C, DC/DC/Relays, 14DI/10DO

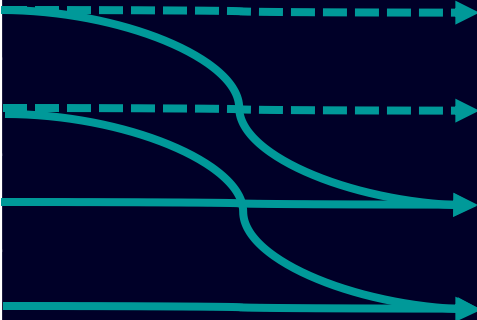


CPU modules „fail-safe“



S7-1200	
Designation	Order number
CPU 1214FC, DC/DC/DC, 14DI/10DO/2AI	6ES7214-1AF40-0XB0
CPU 1214FC, DC/DC/Relays, 14DI/10DO/2AI	6ES7214-1HF40-0XB0
CPU 1215FC, DC/DC/DC, 14DI/10DO/2AI/2AO	6ES7215-1AF40-0XB0
CPU 1215C, DC/DC/Relays, 14DI/10DO/2AI/2AO	6ES7215-1HF40-0XB0

S7-1200 G2	
Order number	Designation
6ES7212-1AF50-0XB0	CPU 1212FC, DC/DC/DC, 8DI/6DO
6ES7212-1HF50-0XB0	CPU 1212FC, DC/DC/Relays, 8DI/6DO
6ES7214-1AF50-0XB0	CPU 1214FC, DC/DC/DC, 14DI/10DO
6ES7214-1HF50-0XB0	CPU 1214FC, DC/DC/Relays, 14DI/10DO



Digital signal boards



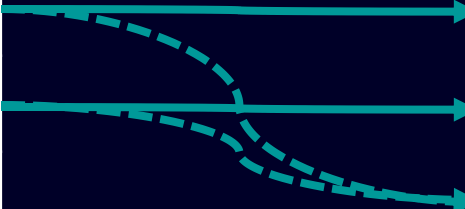
S7-1200		S7-1200 G2	
Designation	Order number	Order number	Designation
SB 1221, 4 DI 24VDC	6ES7221-3BD30-0XB0	6ES7221-3BF50-0XB0	SB 1221, 8 DI 24VDC
SB 1221, 4 DI 5VDC	6ES7221-3AD30-0XB0		
SB1222, 4 DO 24VDC	6ES7222-1BD30-0XB0	6ES7222-1BF50-0XB0	SB 1222, 8 DO 24VDC
SB1222, 4 DQ 5VDC	6ES7222-1AD30-0XB0	6ES7223-7AF50-0XB0	SB 1223 4 DI / 4 DO 5VDC
SB1223, 2 DI/2 DO 24VDC	6ES7223-0BD30-0XB0	6ES7223-7BF50-0XB0	SB 1223 4 DI / 4 DO 24VDC
SB 1223, 2 DI/2 DO 24VDC	6ES7223-3BD30-0XB0		
SB 1223, 2 DI/2 DO 5VDC	6ES7223-3AD30-0XB0		

Analog signal boards



S7-1200	
Designation	Order number
Signal Board SB 1231, 1 AI	6ES7231-4HA30-0XB0
Signal Board SB 1232, 1 AO	6ES7232-4HA30-0XB0

S7-1200 G2	
Order number	Designation
6ES7231-4HD50-0XB0	Signal Board SB 1231, 4 AI
6ES7232-4HD50-0XB0	Signal Board SB 1232, 4 AO
6ES7233-4HD50-0XB0	Signal Board SB 1233, 2 AI / 2 AO



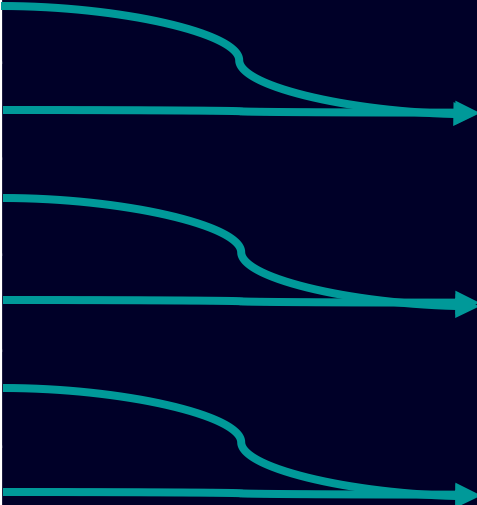
Digital signal modules

Digital input, digital output



S7-1200	
Designation	Order number
Digital input SM 1221, 8 DI, 24V DC	6ES7221-1BF32-0XB0
Digital input SM 1221, 16 DI, 24V DC	6ES7221-1BH32-0XB0
Digital output SM 1222, 8 DO, Changeover	6ES7222-1XF32-0XB0
Digital output SM1222, 16 DO, Relays	6ES7222-1HH32-0XB0
Digital output SM1222, 8 DO, 24V DC	6ES7222-1BF32-0XB0
Digital output SM1222, 16 DO, 24V DC	6ES7222-1BH32-0XB0
Digital output SM1222, 16 DO, 24V DC Sink	6ES7222-1BH32-1XB0

S7-1200 G2	
Order number	Designation
6ES7221-1BH50-0XB0	Digital input SM 1221, 16 DI, 24V DC
6ES7222-5HH50-0XB0	Digital output SM1222, 16 DO, Relays
6ES7222-5BH50-0XB0	Digital output SM1222, 16 DO, 24V DC



Digital signal modules

Digital input, digital output



S7-1200	
Designation	Order number
Digital E/A SM 1223, 8 DI AC/8 DO Relays	6ES7223-1QH32-0XB0
Digital E/A SM 1223, 8 DI / 8 DO 24VDC	6ES7223-1BH32-0XB0

S7-1200 G2	
Order number	Designation
6ES7223-5PH50-0XB0	Digital E/A SM 1223, 8 DI AC/8 DO Relays
6ES7223-5BH50-0XB0	Digital E/A SM 1223, 8 DI / 8 DO 24VDC

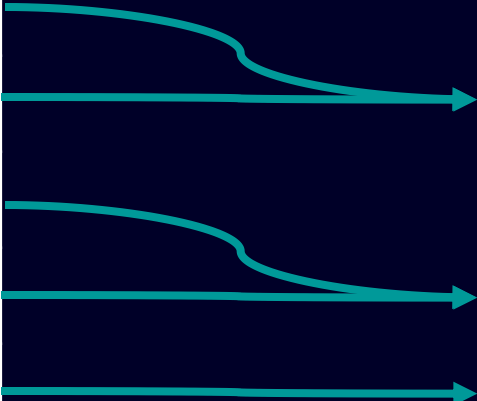


Analog signal modules



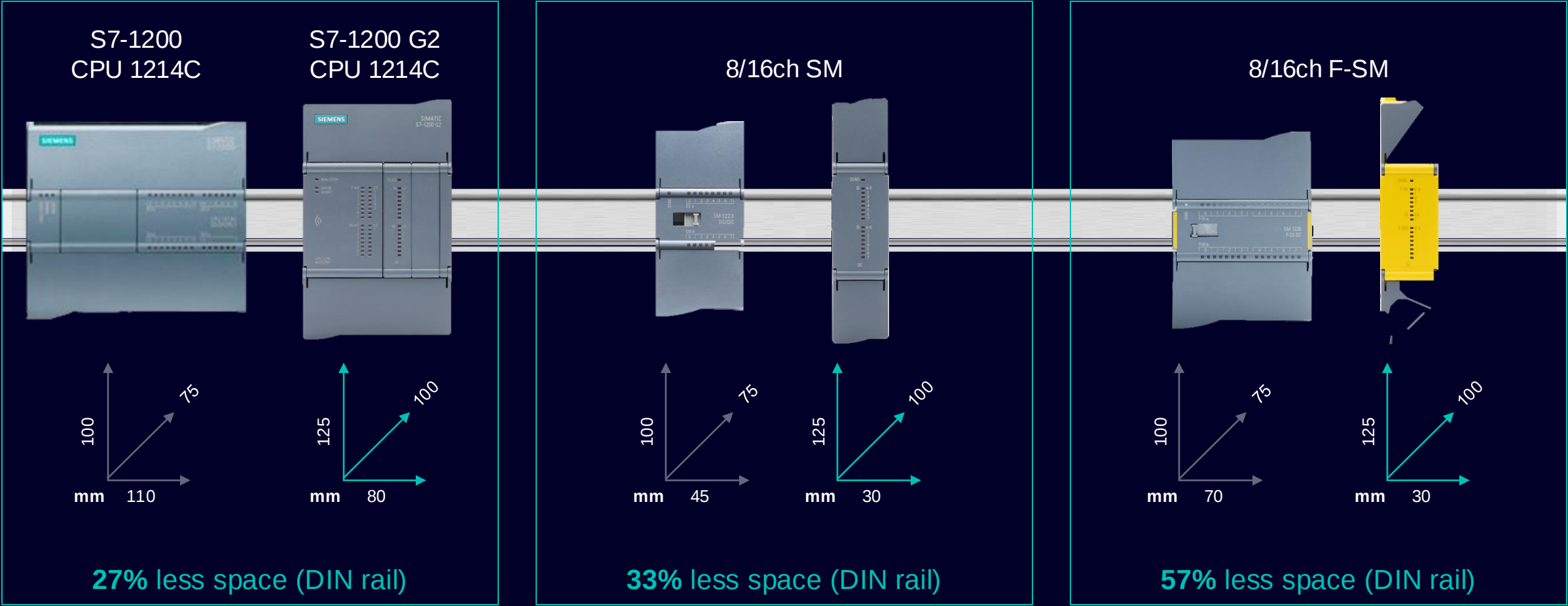
S7-1200	
Designation	Order number
Analog input SM 1231, 4 AI	6ES7231-4HD32-0XB0
Analog input SM 1231, 8 AI	6ES7231-4HF32-0XB0
Analog output SM 1232, 2 AO	6ES7232-4HB32-0XB0
Analog output SM 1232, 4 AO	6ES7232-4HD32-0XB0
Analog E/A SM 1234, 4 AI/2 AO	6ES7234-4HE32-0XB0

S7-1200 G2	
Designation	Order number
6ES7231-4HF50-0XB0	Analog input SM 1231, 8 AI
6ES7232-4HF50-0XB0	Analog output SM 1232, 4 AO
6ES7233-4HF50-0XB0	Analog E/A SM 1234, 4 AI/4 AO



Comparison of dimensions

Examples



Order information

SIMATIC S7-1200 G2

SIMATIC S7-1200 G2

Available CPUs

CPU models		Order number
CPU 1212C	CPU 1212C AC/DC/RLY	6ES7212-1BG50-0XB0
	CPU 1212C DC/DC/DC	6ES7212-1AG50-0XB0
	CPU 1212C DC/DC/RLY	6ES7212-1HG50-0XB0
CPU 1214C	CPU 1214C AC/DC/RLY	6ES7214-1BH50-0XB0
	CPU 1214C DC/DC/DC	6ES7214-1AH50-0XB0
	CPU 1214C DC/DC/RLY	6ES7214-1HH50-0XB0

Fail-safe CPU models		Order number
CPU 1212FC	CPU 1212FC DC/DC/DC	6ES7212-1AF50-0XB0
	CPU 1212FC DC/DC/RLY	6ES7212-1HF50-0XB0
CPU 1214FC	CPU 1214FC DC/DC/DC	6ES7214-1AF50-0XB0
	CPU 1214FC DC/DC/RLY	6ES7214-1HF50-0XB0



SIMATIC S7-1200 G2

Available inputs and outputs

Signal modules		Order number
Digital Input	SM 1221 16 x 24 V DC Input	6ES7221-1BH50-0XB0
Digital Output	SM 1222 16 x 24 V DC Output	6ES7222-5BH50-0XB0
	SM 1222 16 x RLY Output	6ES7222-5HH50-0XB0
Digital Input / Output	SM 1223 8 x 24 V DC Input/ 8 x 24 V DC Output	6ES7223-5BH50-0XB0
	SM 1223 8 x 24 V DC Input/ 8 x RLY Output	6ES7223-5PH50-0XB0
Analog Input	SM 1231 8 x Analog Input	6ES7231-4HF50-0XB0
Analog Output	SM 1232 8 x Analog Output	6ES7232-4HF50-0XB0
Analog Input / Output	SM 1233 4 x Analog Input/ 4 x Analog Output	6ES7233-4HF50-0XB0



SIMATIC S7-1200 G2

Available inputs and outputs

Signal boards		Order number
Digital Input	SB 1221 100kHz 8 x 24 V DC Input	6ES7221-3BF50-0XB0
Digital Output	SB 1222 100kHz 8 x 24 V DC Output	6ES7222-5BF50-0XB0
Digital Input / Output	SB 1223 100kHz 4 x 24 V DC Input/ 100kHz 4 x 24 V DC Output	6ES7223-7BF50-0XB0
	SB 1223 200kHz 4 x 5 V DC Input/ 200kHz 4 x 5 V DC Output	6ES7223-7AF50-0XB0
Analog Input	SB 1231 4 x Analog Input	6ES7231-4HD50-0XB0
Analog Output	SB 1232 4 x Analog Output	6ES7232-4HD50-0XB0
Analog Input / Output	SB 1233 2 x Analog Input/ 2 x Analog Output	6ES7233-4HD50-0XB0



SIMATIC S7-1200 G2

Available power supply / programming software

Power supply

Power supply		Order number
Power Supply	PM 1207, S7-1200 G2 with EX/ ATEX certification	6EP3333-4SC00-3AX0
	PM 1207, S7-1200 G2 without EX/ ATEX certification	6EP3333-4SB00-3AX0



Programming software

SIMATIC software		Order number
Programming Software	STEP 7 Basic V20	6ES7822-0AE24-0YA5
	STEP 7 Professional V20	6ES7822-1AE24-0YA5



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