

Published by Siemens Industry, Inc. 2016

Siemens Industry, Inc.
5300 Triangle Parkway
Norcross, GA 30092

German Article No.: DFFA-B10053-01-7600
U.S. Order No: PCGF-B10053-0516
Printed in U.S.A.

Subject to changes and errors.
The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

Siemens offers automation and drives products with industrial security functions that support safe operation of the plant or machine. They are an important component in a holistic industrial security concept. With this in mind, our products undergo continuous development. We therefore recommend that you keep yourself informed with respect to our product updates, and that you only use the latest versions in each case.

You can find information on this at:
<http://support.automation.siemens.com>.
There you can also register for a newsletter specifically about these products. To ensure the secure operation of a plant or machine, it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art, holistic industrial security policy for the entire plant or machine. Products used from other manufacturers should also be taken into account here.

For more information, go to
usa.siemens.com/industrialsecurity

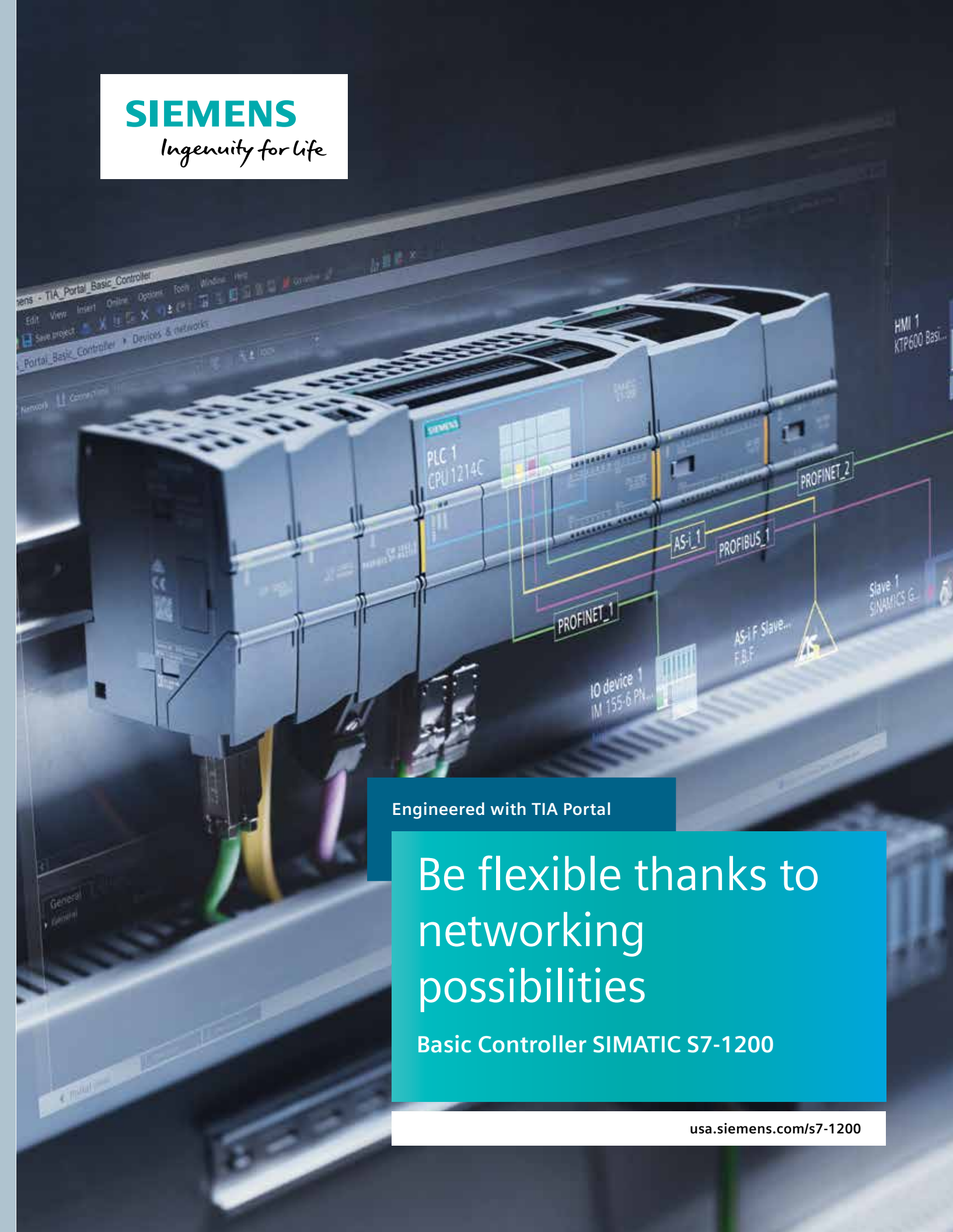
Follow us at
twitter.com/siemensindustry
youtube.com/siemens

Basic Controller SIMATIC S7-1200:

- **New: SIMATIC S7-1200 with PROFIsafe and Energy Meter module**
- **Automation Tasks (Tutorials)**
- **Customer references**

Discover more:
usa.siemens.com/s7-1200

SIEMENS
Ingenuity for Life



Basic Controller SIMATIC S7-1200 All in one!

SIMATIC S7-1200 Basic Controllers are the ideal choice when it comes to performing automation tasks in the low- to mid-performance range with maximum flexibility and efficiency. They deliver convincing results thanks to their comprehensive range of technological functions and integrated IOs, as well as their compact, space-saving design. Thanks to standardized remote control protocols, you can connect SIMATIC S7-1200 controllers directly to your control center without any programming effort.

A further decisive benefit is the incorporation of all SIMATIC controllers into the Totally Integrated Automation Portal (TIA Portal): all SIMATIC controllers have access to a shared database, a standardized operating concept, and integrated services, such as communication protocols like PROFINET.

That means reduced engineering effort and faster commissioning for you. The user-friendly and innovative operation of the TIA Portal, as well as the integrated system diagnostics, also contribute to efficient working.

SIMATIC controllers support automation solutions that are scalable in performance and functionality, and thus cost-efficient in every case. The functionality of the SIMATIC S7-1200 controllers is seamlessly continued by the SIMATIC S7-1500 controllers that have been developed for more complex tasks and that are also available in a compact version. This universality means you benefit from uniform sequences and thus maximum efficiency in engineering, operation, and maintenance, and when migrating to new systems.

This is what the S7-1200 controllers offer you:

- **Innovative design and easy operation**
Compact construction with integrated IOs and flexibility due to the board concept
- **Security Integrated**
Security thanks to protected access to the CPU and program copy protection
- **Technology Integrated**
Incorporated functions and flexible connection of drives
- **Versatile diagnostics**
System diagnostics indicate error messages in plain-text in the TIA Portal on the HMI or web server
- **Efficient engineering**
With SIMATIC STEP 7 Basic in the TIA Portal
- **New: Safety Integrated**
Fail-safe CPUs for the execution of standard and safety-related programs
- **Flexible integration into all network structures**
PROFINET, PROFIBUS, AS-i, IO-Link, CANopen or even connection to remote control centers
- **Use in extreme ambient conditions**
as SIPLUS S7-1200 version

The first microcontroller in both standard and safety versions

The S7-1200 CPUs with Safety Integrated can additionally assume the monitoring of safety functions – e.g. protective door with tumbler. The fail-safe sensors and actuators are integrated either centrally via fail-safe signaling modules or in a distributed manner via PROFIsafe.

Advantages at a glance

- Optimum integration of the safety functions into the overall sequence of production processes
- Efficient engineering in the TIA Portal
- Savings can be made even with just using a few safety features

Standard controller in combination with an external safety-relay solution



- Complex wiring of the safety function (for feedback and possible functional dependencies)
- Fault diagnosis only possible by means of onboard LEDs and not on a central HMI panel

Integrated safety solution with a fail-safe controller of the S7-1200 series



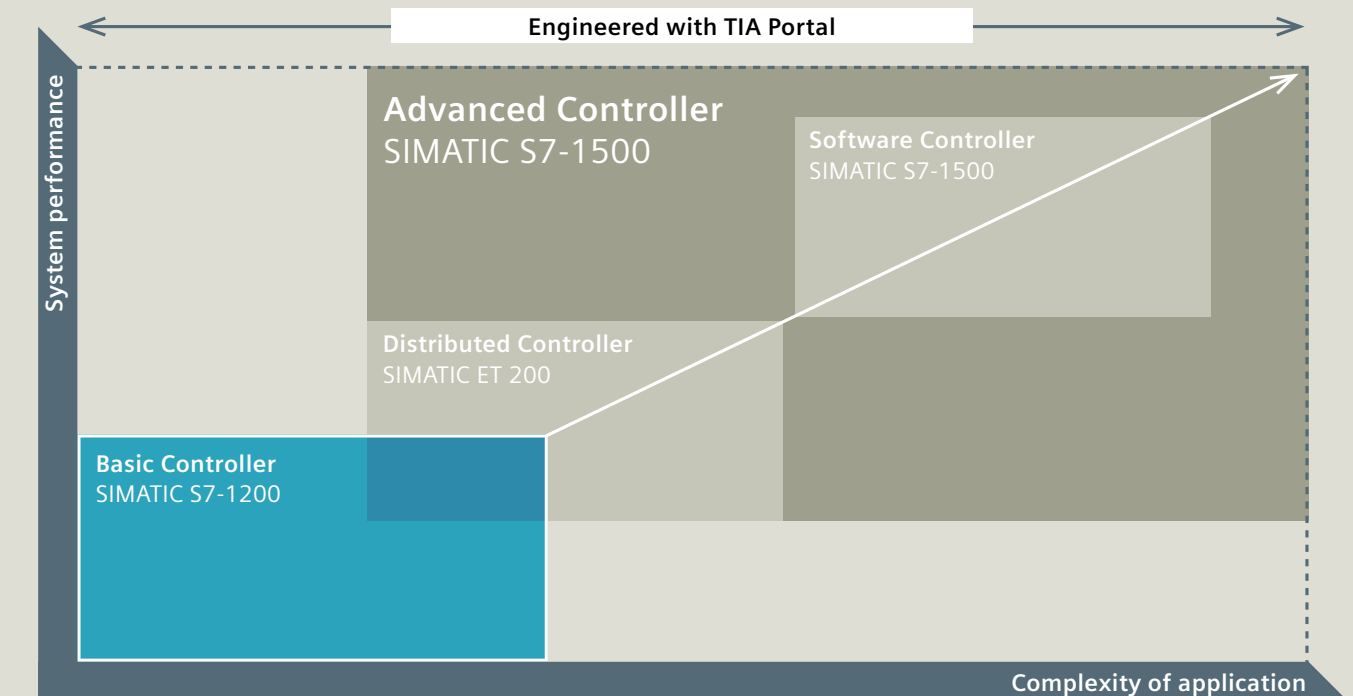
- Reduced effort required for wiring: All information (e.g. signal states and diagnoses) is already available in the system
- Efficient fault diagnosis centrally on an HMI panel

Engineered with TIA Portal

Be flexible thanks to
networking
possibilities

Basic Controller SIMATIC S7-1200

usa.siemens.com/s7-1200



Scalable performance and functionality for consistent and efficient engineering: The functionality of the SIMATIC S7-1200 controllers is seamlessly continued by the SIMATIC S7-1500 devices. This makes subsequent expansions easier and more cost-effective.

Central processing units

Standard modules		Article No.	
CPU 1211C	50 KB, DI 6x24 V DC, DQ 4x24 V DC or 4xRLY, AI 2x10 bit 0–10 V DC, expandable to 3 CM	DC/DC/DC AC/DC/RLY DC/DC/RLY	6ES7 211-1AE40-0XB0 6ES7 211-1BE40-0XB0 6ES7 211-1HE40-0XB0
CPU 1212C	75 KB, DI 8x24 V DC, DQ 6x24 V DC or 6xRLY, AI 2x10 bit 0–10 V DC, expandable to 3 CM + 2 SM	DC/DC/DC AC/DC/RLY DC/DC/RLY	6ES7 212-1AE40-0XB0 6ES7 212-1BE40-0XB0 6ES7 212-1HE40-0XB0
CPU 1214C	100 KB, DI 14x24 V DC, DQ 10x24 V DC or 10xRLY, AI 2x10 bit 0–10 V DC, expandable to 3 CM + 8 SM	DC/DC/DC AC/DC/RLY DC/DC/RLY	6ES7 214-1AG40-0XB0 6ES7 214-1BG40-0XB0 6ES7 214-1HG40-0XB0
CPU 1215C	125 KB, DI 14x24 V DC, DQ 10x24 V DC or 10xRLY, AI 2x10 bit 0–10 V DC, AQ 2x10 bit, 0 to 20 mA, expandable to 3 CM + 8 SM	DC/DC/DC AC/DC/RLY DC/DC/RLY	6ES7 215-1AG40-0XB0 6ES7 215-1BG40-0XB0 6ES7 215-1HG40-0XB0

Fail-safe modules		Article No.	
CPU 1212FC	100 KB, DI 8 x 24 V DC, DQ 6 x 24 V DC or 6 x RLY, AI 2 x 10 bit 0–10 V DC, expandable to 3 CM + 2 SM	DC/DC/DC DC/DC/RLY	6ES7 212-1AF40-0XB0 6ES7 212-1HF40-0XB0
CPU 1214FC	125 KB, DI 14 x 24 V DC, DQ 10 x 24 V DC or 10 x RLY, AI 2 x 10 bit 0–10 V DC	DC/DC/DC DC/DC/RLY	6ES7 214-1AF40-0XB0 6ES7 214-1HF40-0XB0
CPU 1215FC	150 KB, DI 14 x 24 V DC, DQ 10 x 24 V DC or 10 x RLY, AI 2 x 10 bit 0–10 V DC, 0 to 20 mA	DC/DC/DC DC/DC/RLY	6ES7 215-1AF40-0XB0 6ES7 215-1HF40-0XB0

Also available as SIPLUS S7-1200 for use under extreme environmental conditions.
For more information, see siemens.com/siplus-extreme

Communication

Communications modules		Communications processors		Telecontrol and teleservice	
Article No.		Article No.		Article No.	
CM 1241 RS232	6ES7 241-1AH32-0XB0	CP 1242-7 GPRS	6GK7 242-7KX31-0XE0	TS adapter IE Basic	6ES7 972-0EB00-0XA0
CM 1241 RS422/485	6ES7 241-1CH32-0XB0	CP 1243-7 LTE	6GK7 243-7KX30-0XE0	TS adapter IE Advanced	6ES7 972-0EA00-0XA0
CM 1243-2 AS-i master	3RK7 243-2AA30-0XB0	CP 1243-1 Security	6GK7 243-1BX30-0XE0	TS module	TS module modem 6ES7 972-0MM00-0XA0
DCM 1271 AS-i data decoupling	3RK7 271-1AA30-0AA0	CP 1243-1 DNP3 protocol	6GK7 243-1JX30-0XE0	TS module ISDN	6ES7 972-0MD00-0XA0
CM 1242-5 PROFIBUS DP slave	6GK7 242-5DX30-0XE0	CP 1243-1 IEC 60870-5-104 protocol	6GK7 243-1PX30-0XE0	TS module RS232	6ES7 972-0MS00-0XA0
CM 1243-5 PROFIBUS DP master	6GK7 243-5DX30-0XE0	CP 1243-1 PCC (Plant Cloud Connect)	6GK7243-1HX30-0XE0	TS module GSM	6GK7 972-0MG00-0XA0
Partner product	Article No.	Communications board	Article No.	Quad-band GSM/UMTS/LTE ANT794-4MR antenna	6NH9 860-1AA00
HMS CM CAN Open	21620	CB 1241 RS485	6ES7 241-1CH30-1XB0	Control center connection	Telecontrol Server Basic 8 6NH9 910-0AA21-0AA0
				Telecontrol Server Basic 64	6NH9 910-0AA21-0AB0
				Telecontrol Server Basic 256	6NH9 910-0AA21-0AC0

Further Telecontrol products are also available, for more details, see siemens.com/telecontrol



Signal modules

Signal modules – digital		Signal modules – analog		Signal boards		Signal modules – fail-safe		
Signal modules – digital		Signal modules – analog		Signal boards		Signal modules – fail-safe		
Article No.		Article No.		Article No.		Article No.		
SM 1221 DC	DI 8x24 V DC DI 16x24 V DC	6ES7 221-1BF32-0XB0 6ES7 221-1BH32-0XB0	SM 1231 AI	AI 4x13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4–20 mA	6ES7 231-4HD32-0XB0	SM 1226 F-DQ 2 x relay	F-DQ RLY 2x5 A 30 V DC/250 V AC	6ES7 226-6RA32-0XB0
SM 1222 DC	DQ 8x24 V DC 0.5 A DQ 16x24 V DC 0.5 A	6ES7 222-1BF32-0XB0 6ES7 222-1BH32-0XB0	SM 1232 AI	AI 8x13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4–20 mA	6ES7 231-4HF32-0XB0	SM 1226 F-DQ 4 x 24 V DC	F-DQ 4x2 A 24 V DC	6ES7 226-6DA32-0XB0
SM 1222 RLY	DQ 8xRLY 30 V DC/250 V AC 2 A DQ 16xRLY 30 V DC/250 V AC 2 A	6ES7 222-1HF32-0XB0 6ES7 222-1HH32-0XB0	SM 1231 RTD	AI 4xRTD x16 bit AI 8xRTD x16 bit	6ES7 231-5PD32-0XB0 6ES7 231-5PF32-0XB0	SM 1226 F-DI 16 x 24 V DC	F-DI 16x24 V DC	6ES7 226-6BA32-0XB0
SM 1222 DC/DC	DI 8x24 V DC, DQ 8x24 V DC 0.5 A DI 16x24 V DC, DQ 16x24 V DC 0.5 A	6ES7 223-1BH32-0XB0 6ES7 223-1BL32-0XB0	SM 1231 TC	AI 4xTC x16 bit AI 8xTC x16 bit	6ES7 231-5QD32-0XB0 6ES7 231-5QF32-0XB0	SB 1223 DC/DC	DI 2x24 V DC/DQ 2x24 V DC 0.5 A	6ES7 223-0BD30-0XB0
SM 1223 DC/RLY	DI 8x24 V DC, DQ 8xRLY 30 V DC/250 V AC 2 A DI 16x24 V DC, DQ 16xRLY 30 V DC/250 V AC 2 A	6ES7 223-1PH32-0XB0 6ES7 223-1PL32-0XB0	SM 1232 AQ	AQ 2x14 bit ±10 V DC or 4–20 mA AQ 4x14 bit ±10 V DC or 4–20 mA	6ES7 232-4HB32-0XB0 6ES7 232-4HD32-0XB0	SB 1223 AQ	AQ 1x12 bit ±10 V DC or 0–20 mA	6ES7 232-4HA30-0XB0
SM 1223 AC/RLY	DI 8x120/250 V AC, DQ 8xRLY 30 V DC/250 V AC 2 A	6ES7 223-1QH32-0XB0	SM 1234 AI/AQ	AI 4x13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4–20 mA, AQ 2x14 bit ±10 V DC or 4–20 mA	6ES7 234-4HE32-0XB0	SB 1231 AI	AI 1x12 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0–20 mA	6ES7 231-4HA30-0XB0
			SM 1238 Energy Meter 480VAC	Energy measuring module for data acquisition in 1- and 3-phase networks (TN, TT) up to 480 V AC; Current range: 1 A, 5 A	6ES7 238-5XA32-0BX0	SB 1231 RTD	AI 1xRTD x16 bit, type: Platinum (Pt)	6ES7 231-5PA30-0XB0
						SB 1231 TC	AI 1xTC x16 bit, types: J, K voltage range: ±80 mV *Sourcing input	6ES7 231-5QA30-0XB0

Accessories

Accessories		Article No.	
BB 1297	Battery board (long-term backup of real-time clock [RTC])	6ES7 297-0AX30-0XA0	
Memory card	4 MB (optional) 12 MB (optional) 24 MB (optional) 256 MB (optional) 2 GB (optional) 32 GB (optional)	6ES7 954-8LC02-0AA0 6ES7 954-8LE02-0AA0 6ES7 954-8LF02-0AA0 6ES7 954-8LL02-0AA0 6ES7 954-8LP01-0AA0 6ES7 954-8LT02-0AA0	
Digital input simulators	Simulator (8 positions for CPU 1211C/1212C) Simulator (14 positions for CPU 1214C/1215C) Simulator (14 positions for CPU 1217C)	6ES7 274-1XF30-0XA0 6ES7 274-1XH30-0XA0 6ES7 274-1XK30-0XA0	
Analog input simulators	Potentiometer: for all CPUs	6ES7 274-1XA30-0XA0	
Expansion cable for signal module	2.0 m	6ES7 290-6AA30-0XA0	
CSM 1277	4-port unmanaged switch, 4 x RJ45 sockets, 10/100 Mbit/s	6GK7 277-1AA10-0AA0	

Technology

Technology		Article No.	
IO-Link	SM 1278 IO-Link master	6ES7 278-4BD32-0XB0	
SIWAREX weighing modules	SIWAREX WP231, non-automatic weighing machine	7MH4 960-2AA01	
	SIWAREX WP241, belt scales	7MH4 960-4AA01	
	SIWAREX WP251, weigh feeders, sacking system scale and bagging scale	7MH4 960-6AA01	
Condition monitoring	SM 1281 condition monitoring	6AT8007-1AA10-0AA0	
Identification systems	Article No.		
SIMATIC RF120C	Communications module for direct connection of SIMATIC identification systems to the SIMATIC S7-1200	6GT2002-0LA00	
SIMATIC RF200	RFID system in the HF range, compact and cost-efficient, easy connection to the automation system	6GT2821-	
	For more information, see www.siemens.com/rf200		
SIMATIC RF300	RFID system in the HF range, high-capacity data memory and high-speed recording, easy connection to the automation system	6GT2801-	
	For more information, see www.siemens.com/rf300		
SIMATIC RF600	RFID system in the UHF range, for long distances for in production and logistics applications.	6GT2811-	
	For more information, see www.siemens.com/rf600		
SIMATIC MV400	Optical code reading system for barcodes, data matrix codes (DMC), text recognition (OCR), verification	6GF34	
	For more information, see www.siemens.com/codereader		
PM 1207	Input: 120/230 V AC, 50/60 Hz, 1.2 A/0.67 A Output: 24 V DC/2.5 A	6EP1 332-1SH71	

Engineering framework

SIMATIC STEP 7 software		Article No.	
SIMATIC STEP 7 SP1 Basic V13	Floating license	6ES7 822-0AA03-0YA5	
Software Update Service SIMATIC STEP 7 Basic	Floating license	6ES7 822-0AA00-0YL0	
Upgrade SIMATIC STEP 7 Basic V11–V12 to V13	Floating license	6ES7 822-0AA03-0YE5	
SIMATIC STEP 7 Safety Basic V13 SP1	Floating license	6ES7833-1FB13-0YA5	
Software Update Service STEP 7 Safety Basic – Standard	Floating license	6ES7833-1FD00-0YX2	