SIEMENS

Engineered with TIA Portal

SIMATIC S7-1200 Basic Controller

The compact device that offers simple engineering with the TIA Portal

Intuitive, efficient, and proven – TIA Portal redefines engineering.

siemens.com/s7-1200

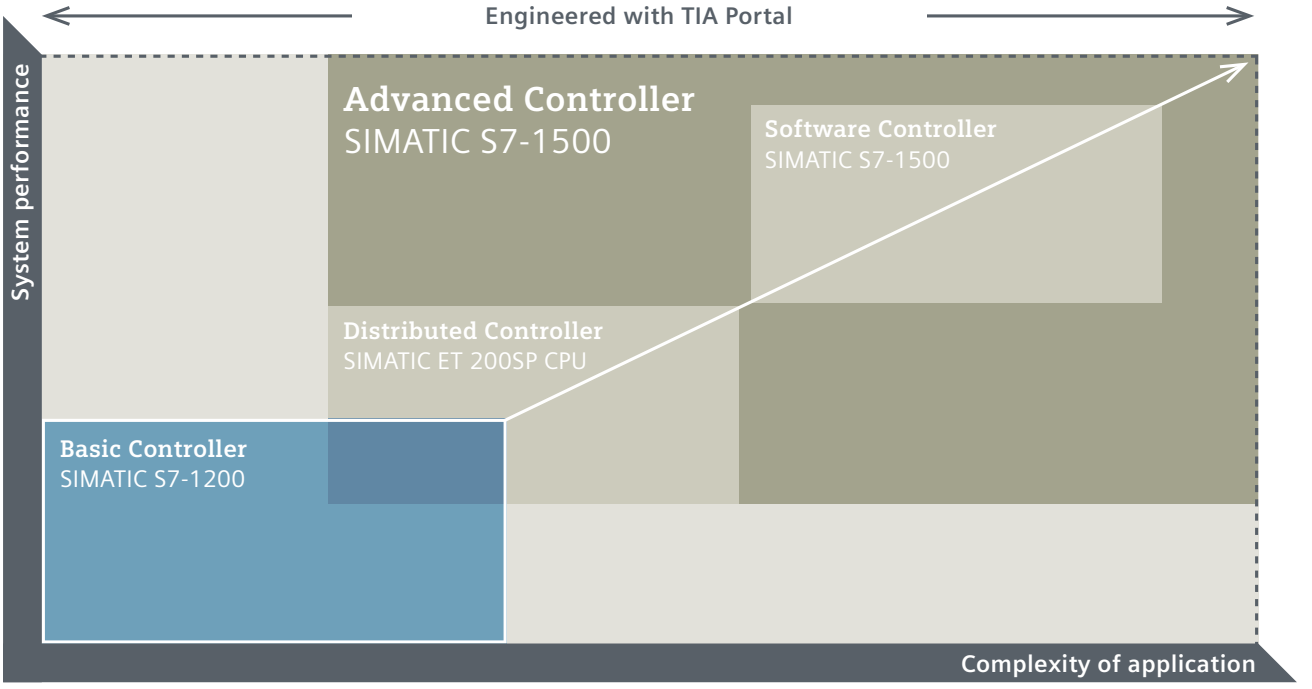
SIMATIC S7-1200 Basic Controller
All in one!

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.



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.

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

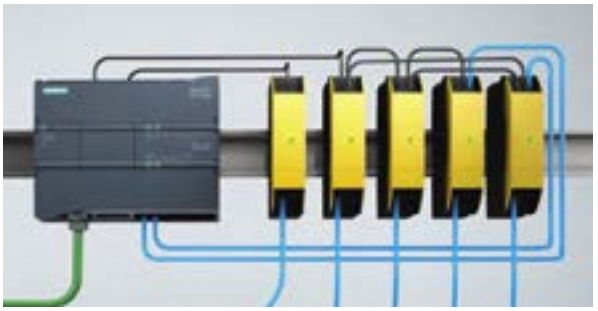
The first microcontroller in both standard and safety versions

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 connected by means of fail-safe signal modules.

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

Central processing units

Standard modules

CPU 1211C

50 KB, DI 6 x 24 V DC, DQ 4 x 24 V DC or 4 x RLY, AI 2 x 10 bit 0–10 V DC, expandable to 3 CM

	Article No.
DC/DC/DC	6ES7 211-1AE40-0XB0
AC/DC/RLY	6ES7 211-1BE40-0XB0
DC/DC/RLY	6ES7 211-1HE40-0XB0

CPU 1212C

75 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

	Article No.
DC/DC/DC	6ES7 212-1AE40-0XB0
AC/DC/RLY	6ES7 212-1BE40-0XB0
DC/DC/RLY	6ES7 212-1HE40-0XB0

CPU 1214C

100 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, expandable to 3 CM + 8 SM

	Article No.
DC/DC/DC	6ES7 214-1AG40-0XB0
AC/DC/RLY	6ES7 214-1BG40-0XB0
DC/DC/RLY	6ES7 214-1HG40-0XB0

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

CPU 1215C

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, AQ 2 x 10 bit, 0 to 20 mA, expandable to 3 CM + 8 SM

	Article No.
DC/DC/DC	6ES7 215-1AG40-0XB0
AC/DC/RLY	6ES7 215-1BG40-0XB0
DC/DC/RLY	6ES7 215-1HG40-0XB0

CPU 1217C

150 KB, DI 10 x 24 V DC, 4 x 1.5 V differential, DQ 6 x 24 V DC, 4 x 1.5 V differential, AI 2 x 10 bit 0–10 V DC, AQ 2 x 10 bit 0–20 mA, line driver IO for (1 MHz ±1.5 V), expandable to 3 CM + 8 SM

	Article No.
DC/DC/DC	6ES7 217-1AG40-0XB0

Fail-safe modules

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

	Article No.
DC/DC/DC	6ES7 214-1AF40-0XB0
DC/DC/RLY	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, AI 2 x 10 bit, 0 to 20 mA

	Article No.
DC/DC/DC	6ES7 215-1AF40-0XB0
DC/DC/RLY	6ES7 215-1HF40-0XB0

Communication

Communications modules

	Article No.
CM 1241 RS232	6ES7 241-1AH32-0XB0
CM 1241 RS422/485	6ES7 241-1CH32-0XB0
CM 1243-2 AS-i master	3RK7 243-2AA30-0XB0
DCM 1271 AS-i data decoupling	3RK7 271-1AA30-0AA0

	Article No.
CM 1242-5 PROFIBUS DP slave	6GK7 242-5DX30-0XE0
CM 1243-5 PROFIBUS DP master	6GK7 243-5DX30-0XE0

Communications processors

	Article No.
CP 1242-7 GPRS	6GK7 242-7KX31-0XE0
CP 1243-7 LTE	6GK7 243-7KX30-0XE0
CP 1243-1 Security	6GK7 243-1BX30-0XE0
CP 1243-1 DNP3 protocol	6GK7 243-1JX30-0XE0
CP 1243-1 IEC 60870-5-104 protocol	6GK7 243-1PX30-0XE0
CP 1243-1 PCC (Plant Cloud Connect)	6GK7243-1HX30-0XE0
CP 1243-8 IRC ST7 protocol	6GK7243-8RX30-0XE0

Telecontrol and teleservice

	Article No.
TS adapter IE Basic	6ES7 972-0EB00-0XA0
TS adapter IE Advanced	6ES7 972-0EA00-0XA0
TS module	
TS module modem	6ES7 972-0MM00-0XA0
TS module ISDN	6ES7 972-0MD00-0XA0
TS module RS232	6ES7 972-0MS00-0XA0
TS module GSM	6GK7 972-0MG00-0XA0

	Article No.
Quad-band GSM/UMTS/LTE ANT794-4MR antenna	6NH9 860-1AA00

	Article No.
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

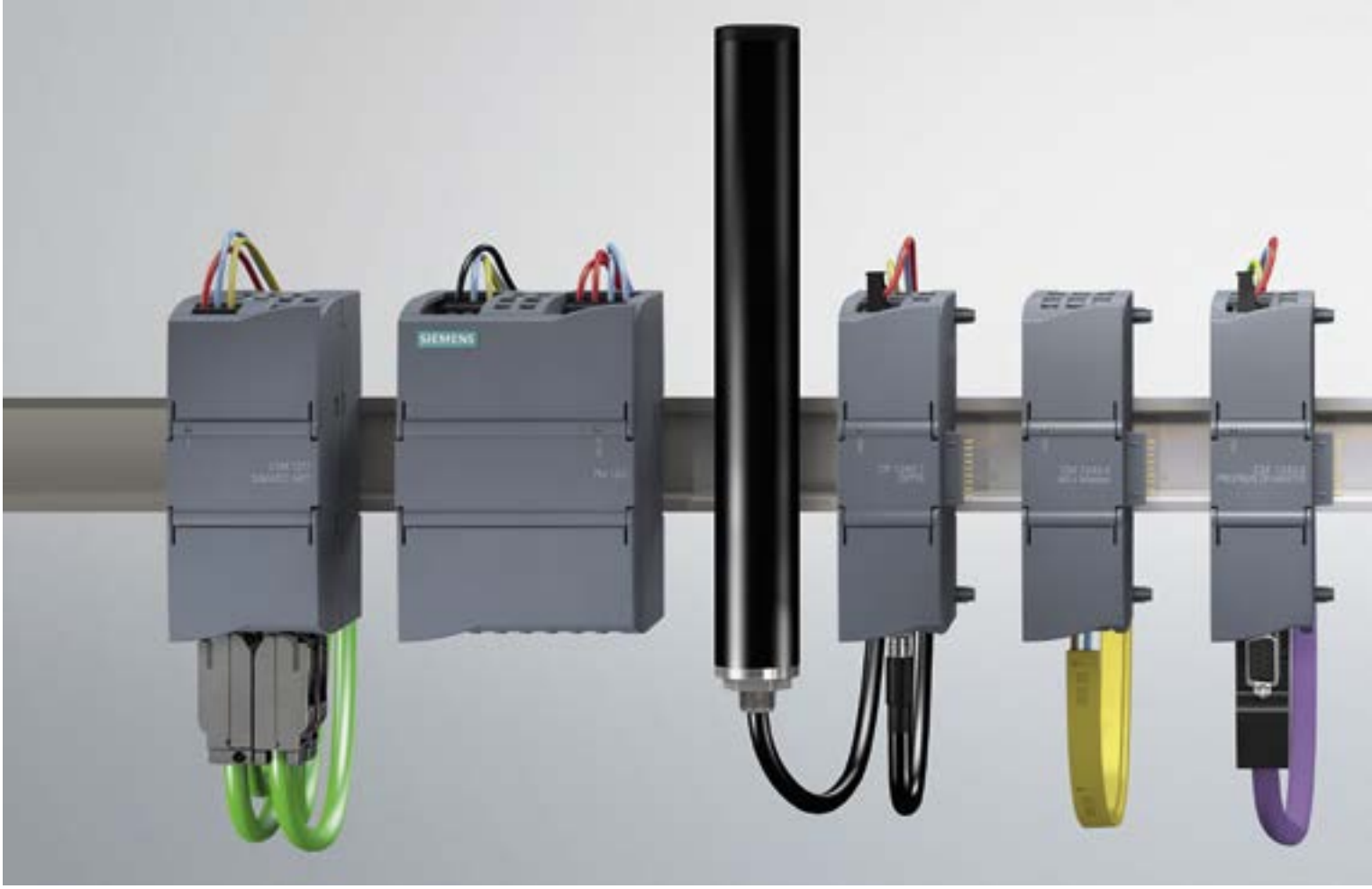
Further Telecontrol products are also available, for more details, see siemens.com/telecontrol

Partner product

	Article No.
HMS CM CAN Open	21620

Communications board

	Article No.
CB 1241 RS485	6ES7 241-1CH30-1XB0



Signal modules

Signal modules – digital

	Article No.
SM 1221 DC	
DI 8 x 24 V DC	6ES7 221-1BF32-0XB0
DI 16 x 24 V DC	6ES7 221-1BH32-0XB0

SM 1222 DC	
DQ 8 x 24 V DC 0.5 A	6ES7 222-1BF32-0XB0
DQ 16 x 24 V DC 0.5 A	6ES7 222-1BH32-0XB0
SM 1222 RLY	
DQ 8 x RLY 30 V DC/250 V AC 2 A	6ES7 222-1HF32-0XB0
DQ 16 x RLY 30 V DC/250 V AC 2 A	6ES7 222-1HH32-0XB0
DQ 8 x RLY switchover 30 V DC/250 V AC 2 A	6ES7 222-1XF32-0XB0
SM 1223 DC/DC	
DI 8 x 24 V DC, DQ 8 x 24 V DC 0.5 A	6ES7 223-1BH32-0XB0
DI 16 x 24 V DC, DQ 16 x 24 V DC 0.5 A	6ES7 223-1BL32-0XB0

SM 1223 DC/RLY	
DI 8 x 24 V DC, DQ 8 x RLY 30 V DC/250 V AC 2 A	6ES7 223-1PH32-0XB0
DI 16 x 24 V DC, DQ 16 x RLY 30 V DC/250 V AC 2 A	6ES7 223-1PL32-0XB0
SM 1223 AC/RLY	
DI 8 x 120/250 V AC, DQ 8 x RLY 30 V DC/250 V AC 2 A	6ES7 223-1QH32-0XB0

Signal modules – analog

	Article No.
SM 1231 AI	
AI 4 x 13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4–20 mA	6ES7 231-4HD32-0XB0
AI 8 x 13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4–20 mA	6ES7 231-4HF32-0XB0
AI 4 x 16 bit ±10 V DC, ±5 V DC, ±2.5 V DC, ±1.25 V DC or 4–20 mA	6ES7 231-5ND32-0XB0
SM 1231 RTD	
AI 4 x RTD x 16 bit	6ES7 231-5PD32-0XB0
AI 8 x RTD x 16 bit	6ES7 231-5PF32-0XB0
Types: Platinum (Pt), copper (Cu), nickel (Ni) or resistance element	
SM 1231 TC	
AI 4 x TC x 16 bit	6ES7 231-5QD32-0XB0
AI 8 x TC x 16 bit	6ES7 231-5QF32-0XB0
Types: J, K, T, E, R, S, N, C, TXK/XK(L), voltage range: ±80 mV	
SM 1232 AQ	
AQ 2 x 14 bit ±10 V DC or 4 – 20 mA	6ES7 232-4HB32-0XB0
AQ 4 x 14 bit ±10 V DC or 4 – 20 mA	6ES7 232-4HD32-0XB0
SM 1234 AI/AQ	
AI 4 x 13 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 4 – 20 mA, AQ 2 x 14 bit ±10 V DC or 4 – 20 mA	6ES7 234-4HE32-0XB0

Signal boards

	Article No.
SB 1221 DC* 200 kHz	
DI 4 x 5 V DC*	6ES7 221-3AD30-0XB0
DI 4 x 24 V DC*	6ES7 221-3BD30-0XB0
SB 1222 DC 200 kHz	
DQ 4 x 5 V DC 0.1 A	6ES7 222-1AD30-0XB0
DQ 4 x 24 V DC 0.1 A	6ES7 222-1BD30-0XB0
SB 1223 DC*/DC	
DI 2 x 24 V DC*/DQ 2 x 24 V DC 0.5 A	6ES7 223-0BD30-0XB0
SB 1223 DC*/DC 200 kHz	
DI 2 x 5 V DC*/DQ 2 x 5 V DC 0.1 A	6ES7 223-3AD30-0XB0
DI 2 x 24 V DC*/DQ 2 x 24 V DC 0.1 A	6ES7 223-3BD30-0XB0
SB 1232 AQ	
AQ 1 x 12 bit ±10 V DC or 0 – 20 mA	6ES7 232-4HA30-0XB0
SB 1231 AI	
AI 1 x 12 bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0 – 20 mA	6ES7 231-4HA30-0XB0
SB 1231 RTD	
AI 1 x RTD x 16 bit, type: Platinum (Pt)	6ES7 231-5PA30-0XB0
SB 1231 TC	
AI 1 x TC x 16 bit, types: J, K voltage range: ± 80 mV	6ES7 231-5QA30-0XB0

*Sourcing input

Signal modules – fail-safe

	Article No.
SM 1226 F-DQ 2 x relay	
F-DQ RLY 2 x 5 A 30 V DC/250 V AC	6ES7 226-6RA32-0XB0
SM 1226 F-DQ 4 x 24 V DC	
F-DQ 4 x 2 A 24 V DC	6ES7 226-6DA32-0XB0
SM 1226 F-DI 16 x 24 V DC	
F-DI 16 x 24 V DC	6ES7 226-6BA32-0XB0

Engineering framework

SIMATIC STEP 7 software

	Article No.
SIMATIC STEP 7 SP1 Basic V13	6ES7 822-0AA03-0YA5
Software Update Service SIMATIC STEP 7 Basic	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	6ES7833-1FD00-0YX2

Accessories

Article No.

BB 1297

Battery board
(long-term backup of real-time clock [RTC])
6ES7 297-0AX30-0XA0

Memory card

4 MB (optional)	**6ES7 954-8LC02-0AA0**
12 MB (optional)	**6ES7 954-8LE02-0AA0**
24 MB (optional)	**6ES7 954-8LF02-0AA0**
256 MB (optional)	**6ES7 954-8LL02-0AA0**
2 GB (optional)	**6ES7 954-8LP01-0AA0**
32 GB (optional)	**6ES7954-8LT02-0AA0**

Digital input simulators

Simulator (8 positions for CPU 1211C/1212C)
6ES7 274-1XF30-0XA0

Simulator (14 positions for CPU 1214C/1215C)
6ES7 274-1XH30-0XA0

Simulator (14 positions for CPU 1217C)
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

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

Condition monitoring

SM 1281 condition monitoring; as from Dec. 2015
6AT8007-1AA10-0AA0

Power modules

Article No.

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

Operator control and monitoring

Article No.

SIMATIC HMI KP300 Basic mono PN

Operation using keys, 3" FSTN display, monochrome, adjustable backlighting color (white, red, green, yellow)
PROFINET 6AV6 647-0AH11-3AX0

SIMATIC HMI KP400 Basic color PN

Operation using keys, high-resolution 4" TFT widescreen display, 256 colors
PROFINET 6AV6 647-0AJ11-3AX0

SIMATIC HMI KTP400 Basic

Operation using touchscreen + keys, 4" TFT widescreen display, 65,536 colors
PROFINET 6AV2 123-2DB03-0AX0

SIMATIC HMI KTP700 Basic

Operation using touchscreen + keys, 7" TFT widescreen display, 65,536 colors, PROFINET or PROFIBUS
PROFINET 6AV2 123-2GB03-0AX0
PROFIBUS 6AV2 123-2GA03-0AX0

SIMATIC HMI KTP900 Basic

Operation using touchscreen + keys, 9" TFT widescreen display, 65,536 colors
PROFINET 6AV2 123-2JB03-0AX0

SIMATIC HMI KTP1200 Basic

Operation using touchscreen + keys, 12" TFT widescreen display, 65,536 colors, PROFINET or PROFIBUS
PROFINET 6AV2 123-2MB03-0AX0
PROFIBUS 6AV2 123-2MA03-0AX0

For more information, see **www.siemens.com/basic-panels**

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 MV400

Optical code reading system for barcodes, data matrix codes (DMC), text recognition (OCR), verification
6GF34-
For more information, see www.siemens.com/codereader

For more information, see:

siemens.com/s7-1200

Discover the highlights of the SIMATIC S7-1200:

- New: SIMATIC S7-1200 F-CPU
- New: Firmware 4.1
- Automation Tasks (Tutorials)
- Customer references

SIMATIC
S7-1200 –
see for yourself!

Subject to change without prior notice
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