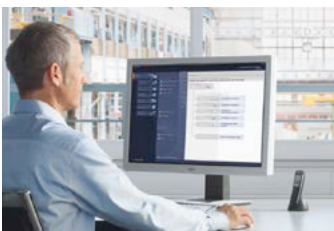




Engineered  
with  
TIA Portal

# SIMATIC S7-1200 Basic Controllers, Basic Panels and TIA Portal

The difference is in the combination



Intuitive, efficient, proven:  
TIA Portal redefines engineering.

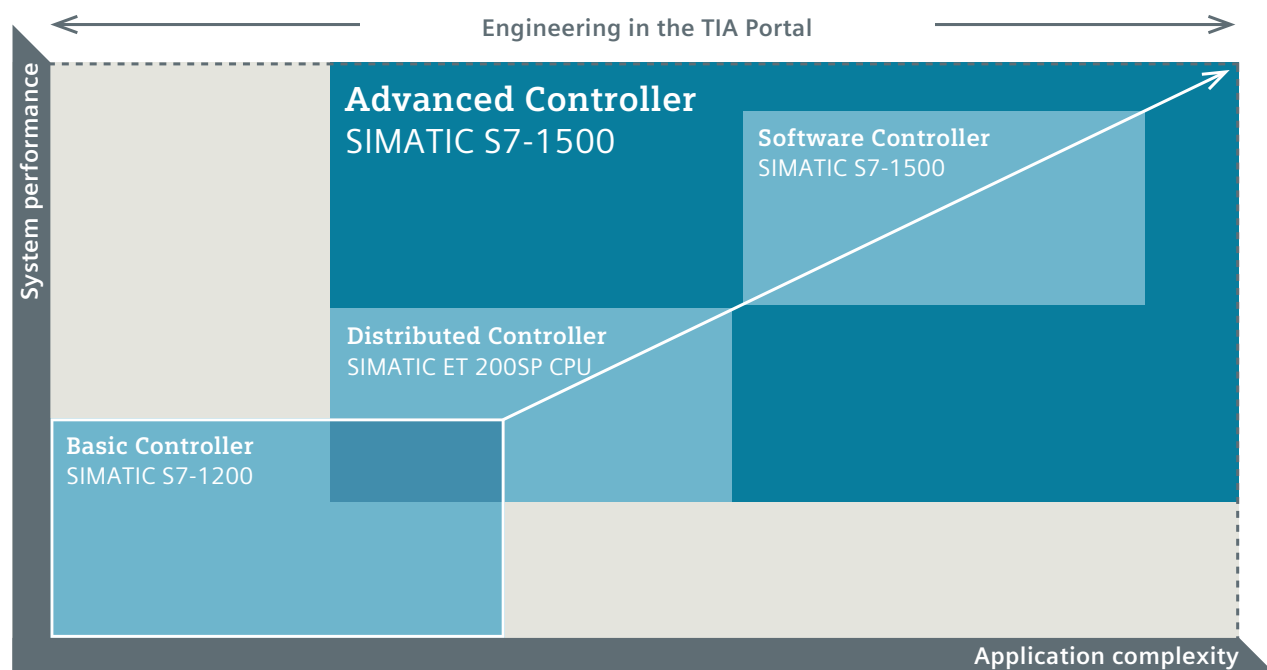
# SIMATIC S7-1200 Basic Controllers All-in-one!

Thanks to their wide range of technological functions and integrated I/Os, as well as featuring a compact, space-saving design, SIMATIC S7-1200 Basic Controllers are the intelligent choice for everyday automation tasks within the scope of small projects. Thanks to standardized remote control protocols, you can connect SIMATIC S7-1200 controllers directly to your control station without any programming.

A further decisive benefit is the integration of SIMATIC controllers into the Totally Integrated Automation Portal (TIA Portal), with every SIMATIC controller having recourse to a shared database, a standardized operator concept and centralized services. This reduces your engineering overhead and your engineering time.

In addition, the user-friendly and innovative operation of the TIA Portal and integrated system diagnostics also contribute to efficient working.

SIMATIC controllers support automation solutions that are scalable in performance and functionality, and thus cost-efficient for any individual application. For more complex tasks, SIMATIC S7-1500 controllers seamlessly continue the functionality of the SIMATIC S7-1200 series, ensuring uniform sequences and thus maximum efficiency in engineering, operation, and maintenance.

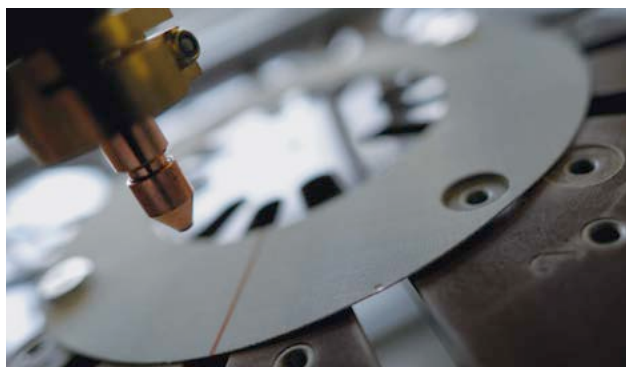


Scalable performance and functionality for consistent and efficient engineering: SIMATIC S7-1500 devices build on the functionality of the SIMATIC S7-1200 Controllers, making later expansions simpler and more cost-effective.

SIMATIC S7-1200 Basic Controllers are the ideal choice for simple and autonomous tasks in the low to mid performance ranges. These compact devices are characterized by minimal space requirements, telecontrol capability and integrated technology modules for measuring, weighing and counting, so that no other special modules are required.

### SIMATIC S7-1200 controllers offer you the following

- **High flexibility and modular design**  
CPU can be expanded with further I/O without additional space requirements
- **Integrated technology**  
Optimized for loop control, weighing, high-speed counting, telecontrol and identification
- **High level of operator convenience in engineering**
- **Networking**  
The integrated PROFINET interface ensures scalability and flexibility
- **Security Integrated**  
Comprehensive access, copy and manipulation protection
- **Integrated diagnostics**  
Diagnostics messages are displayed in plain text in the TIA Portal, on the CPU Web server, in the SIMATIC app, and on the HMI
- **Safety Integrated**  
Failsafe CPUs can execute both standard and safety related programs



#### Block libraries – a secure investment

“I can take program blocks for technological functions that I created for the SIMATIC S7-1200, and also use them for larger projects on the SIMATIC S7-300/400, or in future on the S7-1500. Block libraries are our most important investment today.”

Claus Niedermann,  
Software specialist at Zebra Elektrotechnik



#### Programming in the TIA Portal

“I’ve had very little space on the control panel and I had to position it directly on the grab. That’s one of the reasons why the SIMATIC S7-1200 compact controller with CPU 1214C and three input and output modules was the perfect choice for this task, especially when combined with a SITOP power supply, SIRIUS switching devices, and fuses from Siemens.”

Jürgen Schäfer, HSE

# Central processing units

## Standard modules

### CPU 1211C



50 KB, DI 6x24 V DC, DO 4x24 V DC  
or 4xRLY, AI 2x10 bits 0–10 V DC

DC/DC/DC Art. No.: **6ES7 211-1AE40-0XB0**

AC/DC/RLY Art. No.: **6ES7 211-1BE40-0XB0**

DC/DC/RLY Art. No.: **6ES7 211-1HE40-0XB0**

### CPU 1212C



75 KB, DI 8x24 V DC, DO 6x24 V DC  
or 6xRLY, AI 2x10 bits 0–10 V DC

DC/DC/DC Art. No.: **6ES7 212-1AE40-0XB0**

AC/DC/RLY Art. No.: **6ES7 212-1BE40-0XB0**

DC/DC/RLY Art. No.: **6ES7 212-1HE40-0XB0**

### CPU 1214C



100 KB, DI 14x24 V DC, DO 10x24 V DC  
or 10xRLY, AI 2x10 bits 0–10 V DC

DC/DC/DC Art. No.: **6ES7 214-1AG40-0XB0**

AC/DC/RLY Art. No.: **6ES7 214-1BG40-0XB0**

DC/DC/RLY Art. No.: **6ES7 214-1HG40-0XB0**

### CPU 1215C



125 KB, DI 14x24 V DC, DO 10x24 V DC  
or 10xRLY, AI 2x10 bits 0–10 V DC,  
AO 2x10 bits 0 to 20 mA

DC/DC/DC Art. No.: **6ES7 215-1AG40-0XB0**

AC/DC/RLY Art. No.: **6ES7 215-1BG40-0XB0**

DC/DC/RLY Art. No.: **6ES7 215-1HG40-0XB0**

### CPU 1217C



150 KB, DI 10x24 V DC, 4x1.5 V differential  
DO 6x24 V DC, 4x1.5 V differential AI 2x10 bits  
0–10 V DC, AO 2x10 bits 0–20 mA Line driver  
for (1 MHz ±1.5 V)

DC/DC/DC Art. No.: **6ES7 217-1AG40-0XB0**

## Fail-safe modules

### CPU 1214 FC

125 KB, DI 14x24 V DC, DO 10x24 V DC or 10xRLY,  
AI 2x10 Bits 0–10 V DC

DC/DC/DC Art. No.: **6ES7 214-1AF40-0XB0**

DC/DC/RLY Art. No.: **6ES7 214-1HF40-0XB0**

### CPU 1215 FC

150 KB, DI 14x24 V DC, DO 10x24 V DC or 10xRLY,  
AI 2x10 bits 0–10 V DC, AO 2x10 bits, 0–20 mA

DC/DC/DC Art. No.: **6ES7 215-1AF40-0XB0**

DC/DC/RLY Art. No.: **6ES7 215-1HF40-0XB0**

Also for use under extreme ambient conditions  
as SIPLUS S7-1200

More at [siemens.com/siplus-extreme](http://siemens.com/siplus-extreme)

# Communication modules

## Communication modules

### CM 1241 RS232

Art. No.: **6ES7 241-1AH32-0XB0**

### CM 1241 RS422/485

Art. No.: **6ES7 241-1CH32-0XB0**

### CM 1243-2 AS-i master

Art. No.: **3RK7 243-2AA30-0XB0**

### DCM 1271 AS-i Data decoupling

Art. No.: **3RK7 271-1AA30-0AA0**

### CM 1242-5 PROFIBUS DP slave

Art. No.: **6GK7 242-5DX30-0XE0**

### CM 1243-5 PROFIBUS DP master

Art. No.: **6GK7 243-5DX30-0XE0**

## Communications processors

### CP 1242-7 GPRS

Art. No.: **6GK7 242-7KX30-0XE0**

### CP 1243-7 LTE – available 02/2015

Art. No.: **6GK7 243-7KX30-0XE0**

### CP 1243-1 Security

Art. No.: **6GK7 243-1BX30-0XE0**

### CP 1243-1 DNP3 DNP3 protocol

Art. No.: **6GK7 243-1JX30-0XE0**

### CP 1243-1 IEC IEC 60870-5-104 protocol

Art. No.: **6GK7 243-1PX30-0XE0**

### RF120C RFID/code reader

Art. No.: **6GT2 002-0LA00**

## Telecontrol

### TS Adapter IE Basic

Art. No.: **6ES7 972-0EB00-0XA0**

### TS Module

TS module modem

Art. No.: **6ES7 972-0MM00-0XA0**

TS module ISDN

Art. No.: **6ES7 972-0MD00-0XA0**

TS module RS232

Art. No.: **6ES7 972-0MS00-0XA0**

TS module GSM

Art. No.: **6GK7 972-0MG00-0XA0**



### Quad-band GSM antenna ANT794-4MR

Art. No.: **6NH9 860-1AA00**

### Telecontrol server

Telecontrol Server Basic 8

Art. No.: **6NH9 910-0AA20-0AA0**

Telecontrol Server Basic 64

Art. No.: **6NH9 910-0AA20-0AB0**

Telecontrol Server Basic 256

Art. No.: **6NH9 910-0AA20-0AC0**

## Communications board

### CB 1241 RS485

Art. No.: **6ES7 241-1CH30-1XB0**



## Signal modules

### Signal modules – digital



#### SM 1221 DC

DI 8x24 V DC	Art. No.: <b>6ES7 221-1BF32-0XB0</b>
DI 16x24 V DC	Art. No.: <b>6ES7 221-1BH32-0XB0</b>



#### SM 1222 DC

DO 8x24 V DC 0.5 A	Art. No.: <b>6ES7 222-1BF32-0XB0</b>
DO 16x24 V DC 0.5 A	Art. No.: <b>6ES7 222-1BH32-0XB0</b>

#### SM 1222 RLY

DO 8xRLY 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 222-1HF32-0XB0</b>
DO 16xRLY 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 222-1HH32-0XB0</b>
DO 8xRLY switchover 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 222-1XF32-0XB0</b>

#### SM 1223 DC/DC

DI 8x24 V DC, DO 8x24 V DC 0.5 A	Art. No.: <b>6ES7 223-1BH32-0XB0</b>
DI 16x24 V DC, DO 16x24 V DC 0.5 A	Art. No.: <b>6ES7 223-1BL32-0XB0</b>

#### SM 1223 DC/RLY



DI 8x24 V DC, DO 8xRLY 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 223-1PH32-0XB0</b>
DI 16x24 V DC, DO 16xRLY 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 223-1PL32-0XB0</b>

#### SM 1223 AC/RLY

DI 8x120/250 V AC, DO 8xRLY 30 V DC/250 V AC 2 A	Art. No.: <b>6ES7 223-1QH32-0XB0</b>
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### Signal modules – analog

#### SM 1231 AI

AI 4x13 bits $\pm 10$ V DC, $\pm 5$ V DC, $\pm 2.5$ V DC or 4–20 mA	Art. No.: <b>6ES7 231-4HD32-0XB0</b>
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AI 8x13 bits $\pm 10$ V DC, $\pm 5$ V DC, $\pm 2.5$ V DC or 4–20 mA	Art. No.: <b>6ES7 231-4HF32-0XB0</b>
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AI 4x16 bits $\pm 10$ V DC, $\pm 5$ V DC, $\pm 2.5$ V DC, $\pm 1.25$ V DC or 4–20 mA	Art. No.: <b>6ES7 231-5ND32-0XB0</b>
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#### SM 1231 RTD

AI 4xRTDx16 bits	Art. No.: <b>6ES7 231-5PD32-0XB0</b>
AI 8xRTDx16 bits	Art. No.: <b>6ES7 231-5PF32-0XB0</b>

Types: Platinum (Pt), copper (Cu), nickel (Ni) or resistance element

#### SM 1231 TC

AI 4xTCx16 bits	Art. No.: <b>6ES7 231-5QD32-0XB0</b>
AI 8xTCx16 bits	Art. No.: <b>6ES7 231-5QF32-0XB0</b>

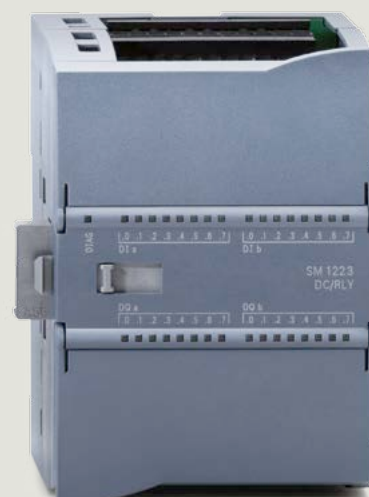
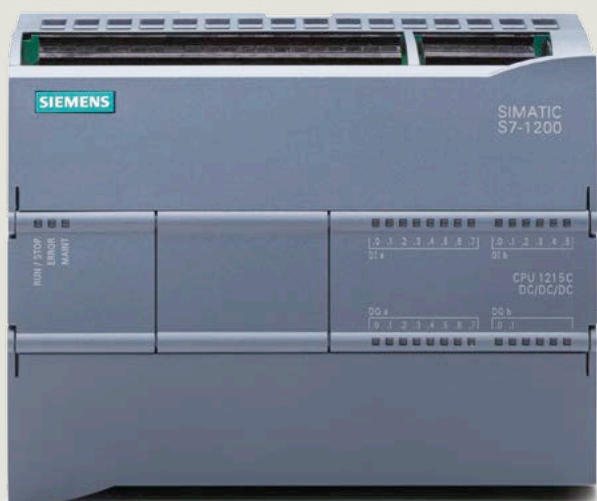
Types: J, K, T, E, R, S, N, C, TXK/XK(L); voltage range:  $\pm 80$  mV

#### SM 1232 AO

AO 2x14 bits $\pm 10$ V DC or 4–20 mA	Art. No.: <b>6ES7 232-4HB32-0XB0</b>
AO 4x14 bits $\pm 10$ V DC or 4–20 mA	Art. No.: <b>6ES7 232-4HD32-0XB0</b>

#### SM 1234 AI/AO

AI 4x13 bits $\pm 10$ V DC, $\pm 5$ V DC, $\pm 2.5$ V DC or 4–20 mA, AO 2x14 bits $\pm 10$ V DC or 4–20 mA	Art. No.: <b>6ES7 234-4HE32-0XB0</b>
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## Signal boards



### SB 1221 DC 200 kHz

DI 4x5 V DC	Art. No.: 6ES7 221-3AD30-0XB0
DI 4x24 V DC	Art. No.: 6ES7 221-3BD30-0XB0

### SB 1222 DC 200 kHz

DO 4x5 V DC 0.1 A	Art. No.: 6ES7 222-1AD30-0XB0
DO 4x24 V DC 0.1 A	Art. No.: 6ES7 222-1BD30-0XB0

### SB 1223 DC/DC

DI 2x24 V DC/DA 2x24 V DC 0.5 A	Art. No.: 6ES7 223-0BD30-0XB0
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### SB 1223 DC/DC 200 kHz

DI 2x5 V DC/DA 2x5 V DC 0.1 A	Art. No.: 6ES7 223-3AD30-0XB0
DI 2x24 V DC/DA 2x24 V DC 0.1 A	Art. No.: 6ES7 223-3BD30-0XB0

### SB 1232 AO

AO 1x12 bits $\pm 10$ V DC or 0–20 mA	Art. No.: 6ES7 232-4HA30-0XB0
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### SB 1231 AI

AI 1x12 bits $\pm 10$ V DC, $\pm 5$ V DC, $\pm 2.5$ V DC or 0–20 mA	Art. No.: 6ES7 231-4HA30-0XB0
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### SB 1231 RTD

AI 1xRTDx16 bits, type: platinum (Pt)	Art. No.: 6ES7 231-5PA30-0XB0
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### SB 1231 TC

AI 1xTCx16 bits, types: J, K voltage range: $\pm 80$ mV	Art. No.: 6ES7 231-5QA30-0XB0
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## Signal modules – fail-safe



### SM 1226 F-DO 2 x Relay

F-DO 2 x 5 A 30 V DC/250 V AC	Art. No.: 6ES7 226-6RA32-0XB0
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### SM 1226 F-DO 4 x 24 V DC

F-DO 4 x 2 A 24 V DC	Art. No.: 6ES7 226-6DA32-0XB0
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### SM 1226 F-DI 16 x 24 V DC

F-DI 16 x 24 VDC	Art. No.: 6ES7 226-6BA32-0XB0
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## Engineering framework



### SIMATIC STEP 7 Basic V13

Art. No.: 6ES7 822-0AA03-0YA5
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### SIMATIC STEP 7 Professional V13

Art. No.: 6ES7 822-1AA03-0YA5
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### Software Update Service SIMATIC STEP 7 Basic

Art. No.: 6ES7 822-0AA00-0YL0
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### Upgrade SIMATIC STEP 7 Basic V11–V12 to V13

Floating license

Art. No.: 6ES7 822-0AA03-0YE5
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## Accessories

### BB 1297

Battery board (long-term backup of the real-time clock (RTC))

Art. No.: **6ES7 297-0AX30-0XA0**

### SIMATIC memory card



4 MB (optional)

Art. No.: **6ES7 954-8LC02-0AA0**

12 MB (optional)

Art. No.: **6ES7 954-8LE02-0AA0**

24 MB (optional)

Art. No.: **6ES7 954-8LF02-0AA0**

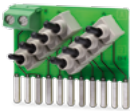
256 MB (optional)

Art. No.: **6ES7 954-8LL02-0AA0**

2 GB (optional)

Art. No.: **6ES7 954-8LP01-0AA0**

### Digital input simulators



Simulator (8 positions for CPU 1211C/1212C)

Art. No.: **6ES7 274-1XF30-0XA0**

Simulator (14 positions for CPU 1214C/1215C)

Art. No.: **6ES7 274-1XH30-0XA0**

Simulator (14 positions for CPU 1217C)

Art. No.: **6ES7 274-1XK30-0XA0**

### Analog input simulators

Potentiometer: for all CPUs

Art. No.: **6ES7 274-1XA30-0XA0**

### Expansion cable for signal module



2.0 m

Art. No.: **6ES7 290-6AA30-0XA0**

### CSM 1277



4-port unmanaged switch, 4 x RJ45 sockets, 10/100 Mbit/s

Art. No.: **6GK7 277-1AA10-0AA0**

## Technology

### IO-Link

SM 1278 IO-Link master

Art. No.: **6ES7 278-4BD32-0XB0**

### SIWAREX weigh beams WP 231 SIWAREX

Static scales

Art. No.: **7MH4 960-2AA01**

### WP 241 SIWAREX

Conveyor scale

Art. No.: **7MH4 960-4AA01**

## Power modules

### PM 1207



Input: 120/230 V AC, 50/60 Hz, 1.2 A/0.67 A, output: 24 V DC/2.5 A

Art. No.: **6EP1 332-1SH71**

## HMI

### KP300 Basic mono PN



Operation using keys, 3" FSTN display, monochrome, modifiable backlighting color (white, red, green, yellow)

Art. No.: **6AV6 647-0AH11-3AX0**

### KP400 Basic color PN



Operation using touch screen + keys, 4" TFT LCD display, 65536 colors

Art. No.: **6AV6 647-0AJ11-3AX0**

### KTP400 Basic



Operation using touch screen + keys, 9" TFT LCD display, 65536 colors

Art. No.: **6AV2 123-2DB03-0AX0**

### KTP700 Basic



Operation using touch screen + keys, 7" TFT LCD display, 65536 colors, PROFINET or PROFIBUS

Art. No.: **6AV2 123-2GB03-0AX0**

Art. No.: **6AV2 123-2GA03-0AX0**

### KTP900 Basic



Operation using touch screen + keys, 7" TFT LCD display, 65536 colors, PROFINET or PROFIBUS

Art. No.: **6AV2 123-2JB03-0AX0**

### KTP1200 Basic



Operation using touch screen + keys, 12" TFT LCD display, 65536 colors, PROFINET or PROFIBUS

Art. No.: **6AV2 123-2MB03-0AX0**

Art. No.: **6AV2 123-2MA03-0AX0**

Current information can be found at: [siemens.com/basic-panels](http://siemens.com/basic-panels)

## Identification

### SIMATIC RF200



RFID system in the HF range, compact and cost-effective, simple connection to automation system

Art. No.: **6GT2821-**

More product information available at [www.siemens.com/rf200](http://www.siemens.com/rf200)

### SIMATIC RF300



RFID system in the HF range, large data memory and fast acquisition, simple connection to automation system

Art. No.: **6GT2801-**

More product information available at [www.siemens.com/rf300](http://www.siemens.com/rf300)

### SIMATIC RF600



RFID system in the UHF range, reliable and flexible SIMATIC integration and connection to PC/IT

Art. No.: **6GT2811-**

More product information available at [www.siemens.com/rf600](http://www.siemens.com/rf600)

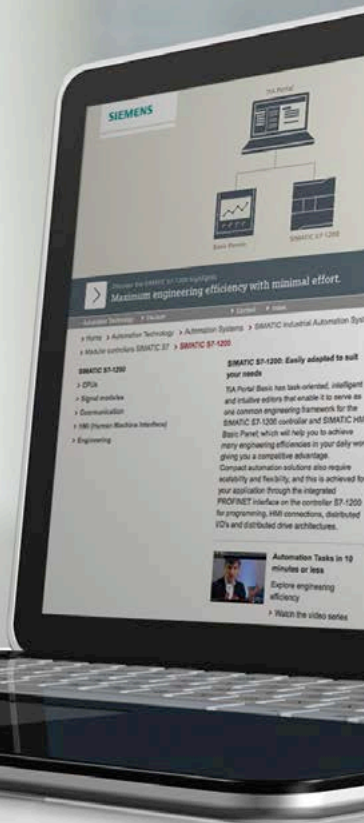
Find out more:

[siemens.com/s7-1200](http://siemens.com/s7-1200)

## Discover the benefits of SIMATIC S7-1200:

- The new CPU 1217C
- SIMATIC S7-1200 automation tasks in less than 10 minutes
- Reference videos
- New firmware 4.1
- New: Safety Integrated for S7-1200

SIMATIC S7-1200 – see for yourself!



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