

SIEMENS

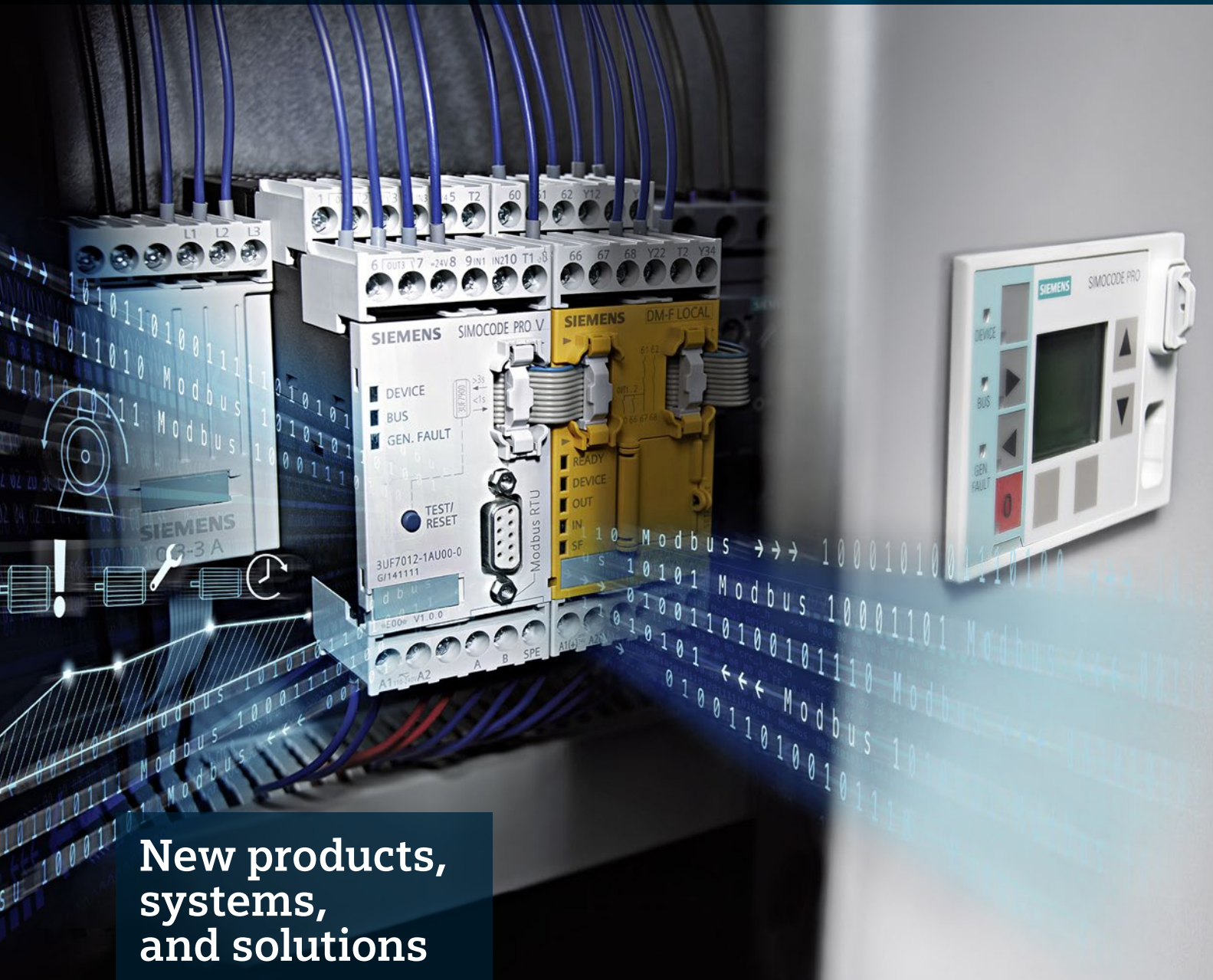
# advance

## product news

Hannover Messe  
April 13–17, 2015  
Hall 9

[siemens.com/hm](http://siemens.com/hm)

Number 1 | April 2015 | [siemens.com/advance](http://siemens.com/advance)



**New products,  
systems,  
and solutions**

The Simatic S7-1500C Advanced Controller impresses with high performance at small size



## Hannover Messe

### 04 Hands-on digitalization

## Controllers

### 08 Portfolio extended with compact Advanced Controllers

## Motion control

### 14 Combination of motion-control functions and embedded IPC

## Human Machine Interface

### 15 Mobile and rugged Simatic hardware and efficient software for various applications

## Industrial PC

### 17 Compact high-performance Nano IPCs and new panel PCs with high protection degree and Ethernet interface

## Power supplies

### 19 Transparent diagnostics, maintenance, and energy management in the control circuit

## Integrated Drive Systems

### 21 Energy-efficient Simotics motors with synchronous-reluctance technology

## Industrial controls

### 25 High-quality and flexible Sirius commanding and signaling devices

## advance product news 1/2015

**Publisher:**  
Siemens AG  
Division Digital Factory  
Division Process Industries & Drives  
Gleiwitzer Str. 555  
90475 Nuremberg, Germany  
magazines.industry@siemens.com  
siemens.com/advance-product-news

**Responsible for technical content:**  
Ralf Schmitt (in accordance with the German press law),  
Matthias Bruns, John Clendening,  
Heinz Eisenbeiss, Bernd Heuchemer,  
Werner Müller, Christiane Röschke,  
Marcus Wissmeier

**Publishing house:**  
Publicis Pixelpark Publishing  
P.O. Box 32 40, 91050 Erlangen,  
Germany

**Editors:** Gabriele Stadlbauer,  
Marion Schwab

**Print:** Passavia Druckservice, Passau  
**Circulation:** 15,000  
*advance product news* is issued twice a year

© 2015 by Siemens Aktiengesellschaft  
Munich and Berlin.  
All rights reserved.

ISSN 1611 101X (Print)  
IWI: TADV  
Article No.: CGMC-M10006-00-7600

**Photos:** Siemens AG,  
unless otherwise stated

**Cover photo:** Siemens AG  
Printed in Germany

The following products are registered trademarks of Siemens AG: DRIVE-CLiQ, ET 200, S7-300, S7-400, S7-1200, S7-1500, LOGO!, SCALANCE, SENTRON, SIMATIC, SIMATIC HMI, SIMIT, SIMOGEAR, SIMOTICS, SIMOTION, SINAMICS, SIPLUS, SIRIUS, SITOP, STEP, TIA, TIA Portal, WinCC

If trademarks, trade names, technical solutions, or similar are not listed above, this does not imply that they are not registered.

The information provided in this magazine contains merely general descriptions or characteristics of performance, which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.



## Dear readers,



The focus of Hannover Messe is digitalization as the key to greater productivity, efficiency, and flexibility. Today, efficiency can be increased only by optimizing the interaction between systems and processes. This requires a high degree of networking, high-speed communications, and automated analysis of the acquired information. Digitalization offers all this.

Under the slogan "On the Way to Industrie 4.0 – Driving the Digital Enterprise," we will present technologies and products for industry from our extensive electrification, automation, and digitalization portfolio at Hannover Messe in Hall 9, Booth D35. Whether through Totally Integrated Automation (TIA), Integrated Drive Systems (IDS), industrial software, or data-based services, we aim to deploy our extensive range of solutions to support enterprises as they move into the digital future. We will present our most important products in this issue of *advance product news*. At this year's Hannover Messe, we will demonstrate the advantages of digitalization. The Digitalization Forum will be a highlight of our booth, where interactive exhibits, presentations, and shows will illustrate the significance of digitalization for current industrial practice.

I hope you enjoy reading this issue, and I look forward to seeing you at Hannover Messe!

Yours,

Karlheinz Kaul  
CEO Digital Factory Control Products

### Industrial identification

- 28 New RFID transponders and readers for seamless production and logistics

### Industrial communication

- 30 Rugged router for broadband communications

### Industry services

- 32 Increase plant efficiency, prevent dangers with customized services

### Industry software

- 33 PLM software as key to digital production

## Three ways to order your subscription

- 1** Order on the internet at [siemens.com/advance](http://siemens.com/advance)
- 2** Send an e-mail to [magazines.industry@siemens.com](mailto:magazines.industry@siemens.com)
- 3** Send a fax to +49 211 3 99-4 21 81

## Current newsletters

Siemens offers subscriptions to electronic newsletters on various topics at [siemens.com/tia-newsletter](http://siemens.com/tia-newsletter). The Totally Integrated Automation newsletter, for example, will inform you about new hardware and software, services, application examples, and important dates and events on the topic of Totally Integrated Automation by e-mail – electronically and always up-to-date. Simply register with your e-mail address at

[industry.siemens.com/newsletter](http://industry.siemens.com/newsletter)

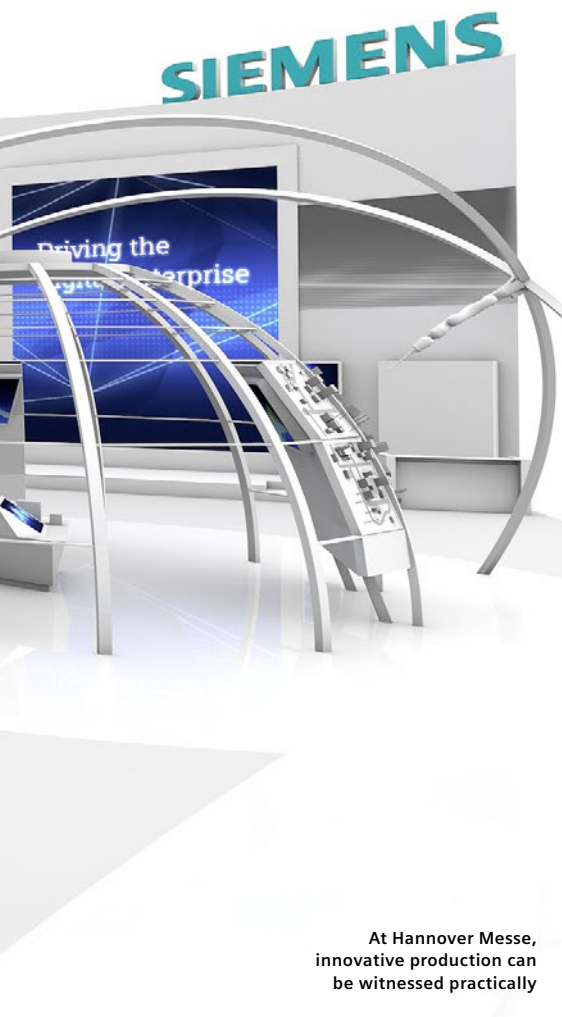


Hannover Messe 2015

# Hands-on digitalization

At Hannover Messe, Siemens presents its comprehensive portfolio of products and solutions for the industry at its booth. The Digitalization Forum highlights four showcases where visitors can see for themselves the benefits of the fusion of the real and the virtual worlds.





At Hannover Messe,  
innovative production can  
be witnessed practically

**D**igitalization has become a crucial lever for growth in almost all industries. The only means of achieving genuine efficiency advances today is to adopt a comprehensive approach to system and process optimization with a focus on the interaction of the various parts. This requires a high level of networking, new speed in communication, and automated analysis of the information that is obtained. Digitalization is opening up completely new opportunities for manufacturing companies to make products and solutions smarter and thus design and manufacture them faster and more efficiently. In the Digitalization Forum at its booth, Siemens illustrates how important the interaction of the virtual and real worlds has already become in many industries, what opportunities it offers, and how it will shape the future for companies.

### Exploring the virtual world in real life

A highlight of the forum is the digitalization globe. Touch screens provide visitors with an interactive opportunity to discover how digitalization is changing our world. Six examples from the areas of energy, digital factory, process industry, building control technology, service and smart data, and mobility enable visitors to experience how to face today the challenges of tomorrow.

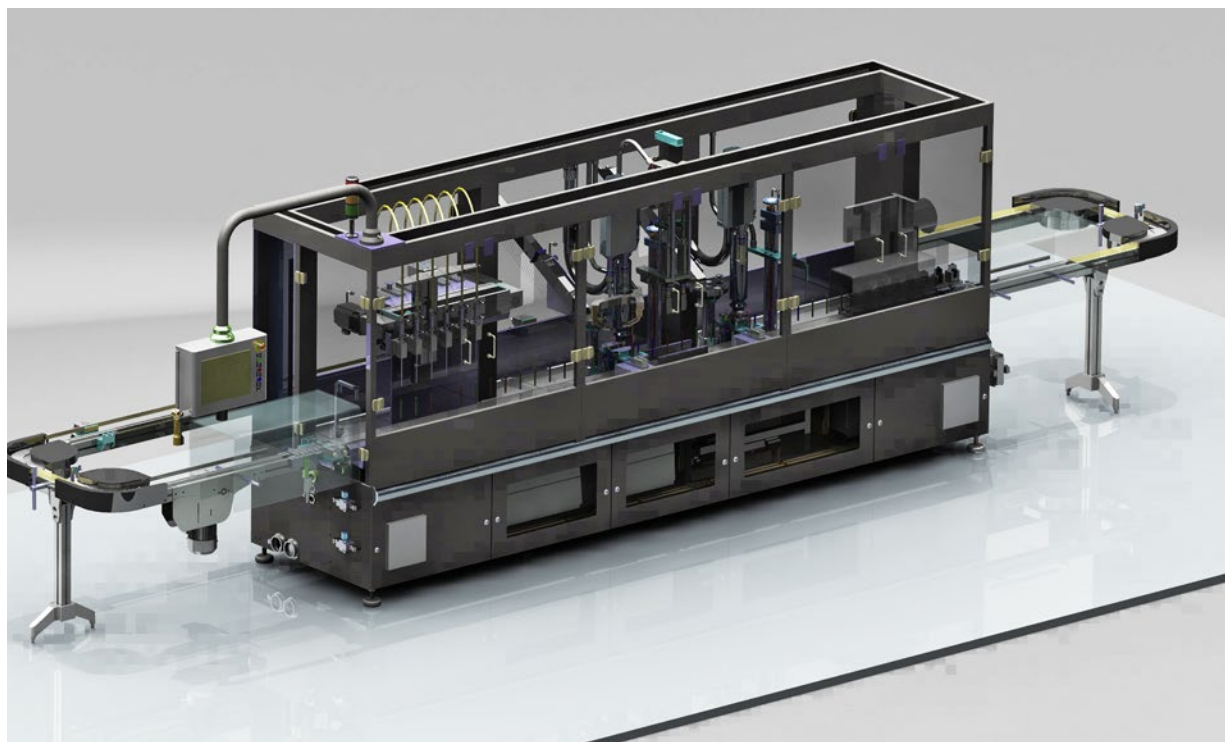
Four showcases feature current examples from real life and impressively show how digitalization provides for more flexibility, greater availability, significant increases in productivity, and a shorter time to market along the entire industrial value chain. The examples presented include the Maserati Ghibli developed with Siemens software; the innovative multi-carrier system for packaging and bottling machines developed with Festo; a liquid circuit, a typical part of a process industry plant, that can be modified during operation; and different technologies for all aspects of the trendsetting topic of additive manufacturing. The actual exhibits are accompanied by a digital twin that illustrates how the virtual and real elements work together. In addition, visitors can watch software engineers and thereby experience firsthand the benefits of digitalization for all steps of the industrial value chain.

### Digitalization in manufacturing

The Maserati Ghibli is a perfect example of the benefits that automobile manufacturers are already enjoying as a result of the digitalization of processes. It is a highlight for car and technology enthusiasts as well as for automation experts. Visitors will be able to see for themselves how vehicle components are developed, how easy it is to make design modifications, how the detailed simulation of production processes using the Tecnomatix product portfolio can save time and money, and how efficiently the automation of production plants can be advanced with TIA Portal.

Visitors will vividly experience the planning, optimization, and monitoring of complex production processes using

The perfect hardware and software interaction can be seen in the example of the multicarrier system



Simatic IT MES software as well services from Siemens that ensure smooth production and high plant availability thanks to continuous status monitoring and precise maintenance measures.

### Digitalization in mechanical engineering

The innovative multicarrier system for packaging and bottling machines developed with Festo which is also showcased at the Digitalization Forum, illustrates digitalization in mechanical engineering. The machine stands out in its ability to transport goods and products individually and facilitates the smallest possible batch size, down to batch size 1, which is enabled by the individually controllable, self-propelled vehicles that are driven by linear motors. Developing a machine of this type that is as flexible, efficient, and powerful as possible is a real challenge for machine builders. Siemens' powerful control and simulation solutions provide the crucial key to success. Siemens software such as NX, Mechatronic Concept Designer, and Teamcenter was used for mechatronic and detailed design, while engineering was performed using TIA Portal and Simotion Scout. The Simotion motion control system supplied by Siemens and Sinamics drives enable individual control of the vehicles and coordination with other servo-operated machine modules.

### Digitalization in process industries

In the process industry as well, digitalization is the significant lever to more productivity, efficiency, and flexibility. The optimal control and regulation of comparatively simple process steps along what are often complex process chains are crucial success factors. Another showcase at the Digitalization Forum shows an ideal liquid circuit, where the existing water column is replaced with one that is  $x$  times larger and equipped with an agitator. Visitors can watch the new components being digitally integrated into the existing machine.

The key is integrated engineering with Comos and Simatic PCS 7 from Siemens, which consistently exploits all the advantages of continuous integration based on Totally Integrated Automation (TIA) and Integrated Drive Systems (IDS). Since from the earliest planning stage onward all system data is available to all participating disciplines in a central data platform, plants can be flexibly adapted to new requirements at any time and operated at maximum efficiency.

### Digitalization in innovative manufacturing processes

Additive manufacturing is the fourth showcase at the Digitalization Forum. As part of a highly flexible manufac-



The model of an ideal liquid circuit provides visitors with information on solutions for the process industry



Turbineblade manufactured by additive manufacturing

turing process, even extremely sophisticated geometric shapes and objects that could previously be implemented only to a limited extent or not at all are generated directly from the 3-D data. A comprehensive range of integrated software over the entire lifecycle is available for this new manufacturing process that visitors can experience at the Digitalization Forum: product design with NX; workpiece construction and optimization; and finally machining in a machine controlled with Sinumerik CNC, Simatic, or Simotion.

There will also be a special focus on integrating additive manufacturing processes into line manufacturing with MES, SCADA, and Sinumerik Integrate. This makes additive manufacturing suitable for industrial purposes. Visitors can find out for themselves, through multiple workpieces manufactured by additive manufacturing processes and made of different materials, what kinds of geometries can be produced today with generative production methods, for example, burner nozzles and turbine blades.

### **Integrated product portfolio over the entire lifecycle**

At Hannover Messe visitors once more get to discover innovative products and services from the fields of automation

and drive technology, industrial identification and communication and controls as well as industry software: with CPUs Simatic S7-1511C-1 PN and S7-1512C-1 PN, two new, compact, high-performing members have joined the Simatics S7-1500 Advanced Controller family. The range of Integrated Drive Systems now covers a new drive series featuring synchronous reluctance technology with the Simotics GP/SD VSD4000 line, which stands out due to very high levels of efficiency.

Cost-effective transponders and a mobile reading device with a very wide range for logistic applications complement the Simatic RF600 product family. With Sirius ACT, Siemens provides a completely redeveloped system of rugged commanding and signaling devices, which is easy to use and simple to install. Plus, the Active Workspace function in the Teamcenter PLM software makes all necessary information available to users in no time. One thing that all innovations have in common is that they are making a considerable contribution to strengthening the global competitiveness of industrial enterprises over the long term. ■

[siemens.com/hannover-messe](http://siemens.com/hannover-messe)

## Simatic controllers

# The intelligent choice for any automation task

Siemens offers the right controller for a variety of automation requirements. The new generation of Simatic controllers, comprising Basic, Advanced, Distributed, and Software controllers, impresses with its scalability and integration.



The familiar and proven Simatic controller portfolio has been expanded. The line includes the Simatic S7-1200 Basic Controller for simple and stand-alone applications; the Simatic S7-1500 Advanced Controller for complex applications; the Software Controller, based on Simatic S7-1500 for PC-based automation, and a compact Open Controller with PC-based Software Controller, visualization, and centralized I/Os in a single device. In addition there is now also a very compact and powerful version of the Simatic S7-1500 Advanced Controller available. The new generation of Simatic controllers expands the line of Simatic controllers, which are scalable in terms of performance and functionality. The more powerful controllers build on the functionality of the smaller ones. Users benefit from uniform processes and high efficiency during engineering, operation, and maintenance.

### Compact Advanced Controllers with high performance

The Simatic S7-1511C-1 PN and 1512C-1 PN Advanced Controllers perfectly combine small size with high performance since all key technology functions are already integrated. They are also perfectly suited for switching from older generations of controllers.

### Distributed and PC-based automation

The compact Simatic ET 200SP Open Controller, from the modular distributed controller line, is particularly suited for series machine manufacturing. It is the first controller of this type to combine the functions of a PC-based Software Controller with visualization functions, Windows applications, and centralized I/Os in a single compact device. The Open Controller can be flexibly expanded with standard ET 200SP modules and can be optimized for machines with a distributed architecture.

The CPU 1507S Software Controller, based on the Simatic S7-1500 for PC-based automation with Simatic industrial PCs, is operated independently from Windows and thus has high system availability. The combination of PC-based control systems and high-level language programs is particularly suited for special-purpose engineering. When it comes to programming and handling during engineering tasks, the new Software Controller is fully compatible with the standard Simatic S7-1500 controllers.

### Safety and security integrated

The Simatic S7-1500 Advanced Controller, and for the first time also the Simatic S7-1200 Basic Controller as well as the Simatic ET 200SP Distributed Controller, are now available in failsafe versions. With the new SP1 version of the Step 7 Safety Advanced V13 engineering tool, users can create programs for Simatic failsafe controllers using the same engineering and operating concept for both standard and safety-related tasks. All controllers offer users a detailed security concept. The integrated know-how protection is a new feature for the Simatic S7-1500 Advanced Controller that can automatically assign copy protection by using a Siemens memory card or a controller.

### Efficient engineering

The new Simatic controllers are seamlessly integrated into the TIA Portal engineering framework. This makes engineering, configuring, and using new functions easier. Thanks to the shared database in TIA Portal, comprehensive software and hardware functions are able to efficiently carry out all automation tasks. ■

[siemens.com/simatic-controller](http://siemens.com/simatic-controller)





The Simatic S7-1500 Advanced Controller secures the highest performance for average and high-end applications. The Simatic S7-1500 Controller in compact design complement the portfolio of controllers combining small size with high performance.

## Simatic S7-1500 / CPU 1511C-1 PN / CPU 1512C-1 PN

### Compact design – high performance

Siemens is expanding its portfolio of advanced controllers in the Simatic S7-1500 family with the addition of two particularly compact controllers. The CPUs 1511C-1 PN and 1512C-1 PN combine CPU (including front display) with digital and analog inputs and outputs in one enclosure.

The CPU 1511C-1 PN, with 32 digital IO ports, is just 85 mm wide and the CPU 1512C-1 PN, with 64 digital IO connections, is only 110 mm wide. Both models can be expanded to include additional connections using signal modules if required. Key technology functions such as metering, measuring, and positioning are already integrated into the hardware. The new Siemens controllers are suitable primarily for compact designs, such as those used in series production machines.

The new Advanced Controllers from Siemens are small in size but big in performance. The CPU 1511C-1 PN has a bit performance of 60 ns; the equivalent performance for the somewhat larger CPU 1512C-1 PN is 48 ns. Just by switching from older generations of controllers, users benefit from the large range of functions in the high-performance hardware. For integrating into networks, both models have a Profinet connection with two ports and an integrated Web server.

The engineering of the new Simatic S7-1500 controller in compact design is through the current version of TIA Portal V13. In addition to tried and tested functions such as Safety Integrated and industrial security, the current TIA Portal now features, for example, a comprehensive library design that makes it possible to transfer automation know-how not just within a team but across the entire company. It is also easier to commission Profinet networks. The latest version offers

high-performance functions such as variant management. Automatic address adjustment and option handling – centrally, locally, and via networks – open up new opportunities for machine manufacturers to design modular and expandable machines. Other advantages include the clear potential cost savings in the manufacture, commissioning, and documentation of machinery.

The optimized portfolio provides the right controller for every automation task. Since the launch of the new Simatic S7-1500 generation of controllers, Siemens has systematically expanded its Advanced Controller portfolio. The new compact range provides users with a total of 14 S7-1500 central processing units (of which 6 have Safety Integrated) for a huge variety of applications – from small series production machines to complex plant with significant requirements in terms of speed and deterministics. ■

[siemens.com/s7-1500](http://siemens.com/s7-1500)

### New features

- Particularly compact design
- CPU with inputs and outputs in one enclosure
- CPU 1511C-1 PN, 85 mm wide, with 32 digital IO ports and a bit performance of 60 ns
- CPU 1512C-1 PN, 110 mm wide, with 64 digital IO ports and a bit performance of 48 ns
- Technology functions such as metering, measuring, and positioning already integrated into the hardware

**The Simatic S7-1200 Basic Controller is suited for simple applications. Failsafe CPUs now make safety applications possible in this power range.**

## Simatic S7-1200

# Easy introduction to Safety Integrated

The Simatic S7-1200 Basic Controller can now also perform failsafe tasks. With the failsafe 1214FC and 1215FC failsafe CPUs and the corresponding failsafe I/O modules, an integrated safety solution is now available for Simatic controllers in the low power range. Consistent engineering in TIA Portal makes it possible to easily port failsafe programs from a Simatic S7-1200 to a Simatic S7-1500.

The new Simatic S7-1200 V4.1 has been enhanced with additional functions. Like the Simatic S7-1500, the Simatic S7-1200 now also features option handling in its central configuration, enabling flexible machine designs. In series manufacturing, for example, this enables savings during planning, commis-

## New features

- Failsafe 1214FC and 1215FC CPUs and failsafe I/O modules
- New PID Temp technology object
- Implementation of controlled drives with Closed Loop PTO
- Improved integration of S7-1200 CPs



sioning, and documentation. The new PID Temp technology object provides perfect support for temperature control, and the CPU backup ensures easy restoration of the machine status. Controlled drives can be implemented with the Closed Loop PTO function, which is necessary to integrate Profinet drives. The integration of S7-1200 communications processors into the Simatic S7-1200 was also improved. Users can now access the CPU web server and open user communication via S7-1200 CPs. ■

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

**With Simatic, Siemens offers a multi-functional, modular, and finely scalable system for distributed automation to be used in control cabinet solutions or directly at the machine.**

## Simatic ET 200SP / ET 200MP – time-based I/O modules

# Precision at high speeds

With the new time-based I/O modules for the Simatic ET 200MP and ET 200SP distributed I/O system, production sequences can be flexibly implemented regardless of the controller's or fieldbus's performance. The new modules provide input and output signals with detailed time information. For example, the reaction to an event occurring at the DI can be a specific delay time for the reaction of the output signal – independently of the cycle times of the controller or the application cycle. Time-based I/O modules also increase the plant's productivity by taking over additional performance tasks from the CPU and by providing exact repeatability and high precision in production, even with fast-paced events.

Applications can be easily and flexibly implemented in TIA Portal. This is true for cam controls and sensing probes, as well as for other applications such as sorting products or unloading defective parts. The volumes are scalable and can thus be adapted to the respective machine size. ■

[siemens.com/et200sp](http://siemens.com/et200sp)

[siemens.com/et200mp](http://siemens.com/et200mp)



## New features

- ET 200SP TM Timer DIDQ 10 × 24 V with 4 inputs and 6 outputs for time stamps and precise signaling
- ET 200MP TM Timer DIDQ 16 × 24 V with 1 µs resolution with up to 8 inputs and 16 outputs
- Configuration in TIA Portal
- Scalable volumes

## Simatic ET 200SP CPU/ET 200SP Open Controller

### Compact controllers for distributed applications

A Distributed Controller for distributed applications makes use of the Simatic ET 200SP design. New and specifically suited for series machine manufacturing: the compact Simatic ET 200SP Open Controller.



The new Simatic ET 200SP CPU Distributed Controller is a modular distributed controller that is compact and flexible. Thanks to its compact design, it requires little space in the control cabinet. Because it has the same storage systems, volumes, and features as the Simatic S7-1511 and S7-1513 CPUs, customer programs with varying design types can be used. Three Industrial Ethernet ports with variable bus adapters (RJ45, FC, SCRJ) have been integrated for flexible bus connection. Option handling in the central configuration also makes it possible to flexibly retrofit options without engineering effort.

The distributed controller series is rounded off with the first 1510SP F CPU and 1512SP F CPU for modular and failsafe automation. This makes it possible to implement standard and failsafe applications using one controller in the ET 200SP. Another benefit is its high investment protection, because once a user program has been developed, TIA Portal makes it possible to easily port the program to both Simatic S7-1200 and Simatic S7-1500 controllers.

The compact Simatic ET 200SP Open Controller is another addition to the modular distributed controller series and is particularly suited for series machine manufacturing. It is the first controller of this type to combine the functions of a PC-based Software Controller with visualization, Windows applications, and centralized I/Os in a single compact device.

This means that users need to stock fewer spare parts, and evaluation and maintenance efforts are also significantly reduced. The Open Controller can be flexibly expanded with standard ET 200SP modules and can be optimized for series machines and machines with a distributed structure. Because it has a compact design, it requires little space in the control cabinet. It is also fully compatible with ET 200SP CPU projects, so various performance requirements can be met without additional effort. ■

[siemens.com/distributed-controller](http://siemens.com/distributed-controller)

[siemens.com/open-controller](http://siemens.com/open-controller)

### New features

- ET 200SP Open Controller: powerful all-in-one device with small footprint on the DIN rail
- Very compact system with minimum space requirements in the control cabinet
- Modular expansion of functions with all ET 200SP modules
- Complete engineering in TIA Portal for increased productivity with reduced engineering effort
- Failsafe CPUs 1510SP F and 1512SP F

The Simatic S7-1500-based Software Controller is operated independently of Windows on Simatic industrial PCs and offers high system availability.



## Simatic S7-1500 Software Controller

### Highly available and Windows-independent

With the new Simatic S7-1500 Software Controller, a scalable controller is now available that is particularly useful for applications in special-purpose machine engineering. The controller stands out due to its high system availability, as the production process is not interrupted when the system needs to be rebooted (for updates, for example) or even if Windows crashes.

All the functions of the Simatic S7-1500 can now also be used in PC-based automation, because functions such as motion, security, and system diagnostics have already been integrated. The Simatic S7-1500 Software Controller is used with Simatic industrial PCs (IPCs) and can be scaled with the IPC platform

and functionality. The controller is easily engineered in TIA Portal, so the Software Controller does not require Windows settings.

Security Integrated guarantees that the mechanical engineer's know-how is protected and also offers access protection to the end user. Because PC applications and high-level languages can easily be integrated into the user program, users can also meet special demands with flexibility and ease. ■

[siemens.com/software-controller](http://siemens.com/software-controller)

### New features

- Increased system availability with stand-alone Software Controllers (Windows-independent)
- Increased security thanks to granular know-how and access protection
- Modular machine design with free choice of platform
- Powerful HMI with end-to-end engineering (also available as an all-in-one device)
- Full engineering in TIA Portal: no Windows settings needed in the controller



**LOGO! 8****High performance at a low price****New features**

- Eight devices with an onboard Industrial Ethernet interface in a space-saving design (4 MW)
- Crystal-clear display with six lines and three selectable background colors
- Optional LOGO! CMR2020 and CMR2040 communication module
- Integrated web server for hassle-free programming via remote control, IWLAN, or the Internet

Compared with its predecessor, LOGO! 0BA7, the innovated LOGO! 8 logic module offers more functionality in its space-saving design of only 4 MW, at lower costs. Eight basic devices with and without display and for different voltage ranges have the same range of functions, which makes it very easy to choose the required version. Externally, the crystal-clear, perfectly readable display, which now features six lines with 16 characters each, catches the eye. The user now benefits from twice as many characters per notification than before, as well as three interchangeable background colors. For greater visualization demands, another text display can be connected to the integrated Industrial Ethernet interface. The module is programmed via Industrial Ethernet, eliminating the need for a special programming cable. An outstand-

ing feature of the new LOGO! is the integrated web server, which can be configured with no special programming skills and enables hassle-free and inexpensive remote control and monitoring via IWLAN or the Internet.

The LOGO! Soft Comfort V8 software has been completely redesigned. Communications via Industrial Ethernet are now configured automatically in the network view. Linking of function blocks and transfers between the various programs are easily performed with drag and drop. Existing programs from older versions can be carried over directly, making it significantly simpler to migrate to LOGO! 8. ■

[siemens.com/logo](http://siemens.com/logo)

Siemens micro automation offers targeted and cost-effective solutions for minor automation tasks. The new LOGO! 8 logic module provides tailored, expandable solutions and enables communication via web server without HTML programming skills.

From the initial planning stages to optimal implementation, Siemens offers scalable products, innovative systems, and integrated solutions for motion control, accompanied by a comprehensive range of global services.

## Simotion P320-4 PC-based motion control

### The best of two worlds – rugged and open



The new ultracompact Simotion P320-4 embedded industrial PC combines the ruggedness of a PLC and the openness of a Windows operating system with the full real-time motion control functionality of Simotion. Powerful and well proven in harsh environments, the Simotion P320-4 offers a universal PC-based solution for a wide variety of production machines – including retrofits, thanks to its installation compatibility. The performance of the industrial PC can be flexibly tailored to the respective application. Thanks to its high efficiency, the Simotion P320-4 allows the use of more axes, with up to 250  $\mu$ s cycle time, making it ideal for high-performance applications such as hydraulic presses. Motion control technology packages are integrated into the runtime software, which also features PC monitoring func-

tions such as Watchdog and temperature monitoring. The industrial PC is available in two power classes (Embedded Intel i3 and Standard Intel i7) and is equipped with 4 GB of main memory, the latest storage devices such as CFast or optional SSD, and the fastest storage technology (DDR3). This reduces memory access times.

Flexibility is also key when it comes to mounting. The fanless industrial PC with Profinet on board (Profibus is optional) allows for rail mounting, wall mounting, and portrait assembly options. Vertical mounting is also possible. The Simotion Scout engineering software enables easy and efficient parameterization and programming. Extensive testing and diagnostic functions on Scout and the embedded web server simplify commissioning and troubleshooting. Operator control and monitoring programs are easy to integrate, and visualizations can be displayed on a Simatic panel. ■

[siemens.com/simotion](http://siemens.com/simotion)



### New features

- Fulllest motion control functionality in a compact embedded industrial PC
- Allows the use of more axes with shorter cycle times
- Extension of application range to high-performance applications
- More processing power
- Latest storage media and fastest memory technologies

## Second-generation Simatic HMI Mobile Panels

### Power and safety in the hand

With the second-generation Simatic HMI Mobile Panels, featuring a 7- or 9-inch display and wired connection to Profinet, mobile operator devices will now have the highest performance and functionality. A bright, wide-screen display supplies a perfectly clear, bright, and highly detailed image, and with its 16 million colors and 40% larger display size



compared with predecessor devices, it can now display even complex operating diagrams or graphs. The display's progressive dimming feature can be easily adjusted to different environments. The second-generation

Mobile Panels have exactly the same aspect ratio and resolution as the Comfort Panels. Operating diagrams can be designed in the engineering framework TIA Portal with WinCC, and in the new Style Editor, it is possible to customize stationary and mobile applications with a corporate design directly at the machine. Safety solutions can be configured safely using the versions equipped with an illuminated emergency stop button. For the new devices, evaluation support for safety elements is planned via hard-wired safety relays, failsafe Simatic ET 200 I/Os, and Profisafe with failsafe controllers as per SIL3 or at performance level, respectively. The new compact terminal box requires two-thirds less space than the standard terminal box; it can be simply screwed onto the outside of the control cabinet door and fully wired from the inside. Thus, it can be mounted anywhere on the machine or in the plant, making terminals for Mobile Panels available at the most convenient location for the operator. ■

[siemens.com/mobile-panels](http://siemens.com/mobile-panels)

### New features

- Unique illuminated emergency stop button and flexible safety element evaluation
- High-resolution wide-screen display with 16 million colors for complex process diagrams
- Compact terminal box for cost-effective integration in narrow spaces
- Efficient engineering with WinCC in TIA Portal and the innovative Style Editor

**Simatic HMI – efficient to a new level:** this is the motto of a spectrum of HMI products from a single source, enabling the efficient and cost-effective implementation of various applications.

## Simatic HMI Outdoor Panels

### Extremely flexible for every outdoor situation

Simatic HMI Outdoor Panels have been developed for highly demanding HMI tasks under extreme ambient conditions, for example in cold storage houses, on ships, or in the oil and gas industry. The rugged devices offer the ease of use and high-end functionality known from the Comfort Panel class. The front of the device has UV protection in degree IP65, which makes the device very durable. The devices are equipped with high-resolution, daylight readable, 7- and 15-inch wide-screen displays so they can be flexibly used at any location. With their extremely low glare, automatic dimming feature, and a broad reading angle, operating and monitoring tasks can be carried out safely, effortlessly, and under varying lighting conditions. The devices can be used in almost any industry as they have numerous certifications, have a broad temperature range, and are suitable for environments with up to 90% humidity. ■

[siemens.com/comfort-outdoor](http://siemens.com/comfort-outdoor)



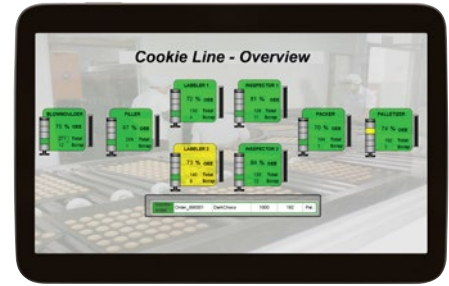
### New features

- Guaranteed readability under varying lighting conditions thanks to automatic dimming feature
- High long-term availability thanks to its UV-protected front (degree of protection IP65)
- Can be used in any industry thanks to extensive certifications. For example, EX/22, FM Class I Div. 2, and shipbuilding are in preparation
- Flexible outdoor use thanks to an operating temperature range of -30°C to +60°C

**SCADA system WinCC V7.3****Comfortable function integrated**

Siemens has continued to innovate the SCADA system WinCC in the new Version 7.3. With the new WinCC/WebUX option, important process information can be displayed at any time, even with mobile terminal devices via Internet. Where necessary, the operator can even intervene in the control system. Simatic Process Historian 2014, used as a long-term archive for any WinCC/PCS 7 projects, now offers even higher performance and security. With Simatic Information Server 2014, plant reports can now be generated and managed from the Web. Thanks to its modern look and feel, this is even easier. The option of using MS PowerPoint is another new feature. ■

[siemens.com/wincc](http://siemens.com/wincc)

**New features**

- WinCC/WebUX: innovative operating and monitoring
- Archive and reports with a system (version independent):
  - Simatic Information Server: web-based with a modern look and feel including extensions for MS Excel, MS Word and now MS PowerPoint
  - Simatic Process Historian: The centralized long-term archive including disaster recovery functionality
- WinCC / Sequence Execution System: the adapter for recipe- and sequence-based processes

**Simatic WinCC Open Architecture V3.13****Efficient, scalable, innovative, and open**

Version 3.13 of the Simatic WinCC Open Architecture (WinCC OA) SCADA system provides efficient tools for analytics, diagnostics, and engineering, along with extended functions for a video option.

Web-based reporting using the standardized SOAP interface has been implemented for greater efficiency. Third-party reporting tools can easily be used, and BIRT templates further simplify reporting. The DB Logger allows user-defined data to be exported from WinCC OA to external databases such as MySQL or RDB. The Simatic WinCC OA Operator app has received a makeover as well: it features a completely revised design that has been adapted for iOS 7, and the iPad version is easy to use on a tablet.

The video option has been expanded with a number of important functions, making digital recording of videos on standard hardware components possible. The video streams can be continuously saved into cyclical memory or set up with a delay to start and stop the recording of a specific event. Users have more flexibility with the new version of WinCC OA because the new IEC 61850 and IEC 61400 drivers make the software more directly applicable to the energy and wind-power sectors. In addition, even the smallest industrial PC from Siemens, the Simatic IPC 227D / 277D Nanobox PC, is now WinCC OA enabled, thanks to the improved scalability. ■

[siemens.com/wincc-open-architecture](http://siemens.com/wincc-open-architecture)

**New features**

- Web-based reporting with standardized SOAP interface
- Extended functions (e.g., recording, playback) in the video option enable native integration of video management systems
- WinCC OA on IPC 227D / 277D Nanobox
- New IEC 61850/61400 drivers



## Simatic Nano IPCs

# Compact power packs for versatile applications

Ranging from compact, fanless embedded IPCs to powerful, expandable, high-end IPCs, the Simatic IPC family represents an ideal starting point for many PC applications in manufacturing.



The new generation of particularly compact and energy-efficient embedded industrial Nano PCs has significantly improved performance compared with the previous generation. The Simatic IPC227E (Nanobox PC) and the Simatic IPC277E (Nanopanel PC with integrated touchscreen) are durable, maintenance-free, and flexible. They are well suited to control, visualization, and communication tasks and as data collectors in sectors such as mechanical engineering, building automation, traffic engineering, and energy transmission.

The heart of the Nano IPC is a latest-generation performance-optimized Intel Celeron (dual- and quad-core) processor. With an integrated 24 V industrial power supply, the fanless devices can be operated without a battery and are designed for maintenance free, round-the-clock continuous operation even at high temperatures and with strict vibration, shock, and EMC requirements. Rugged mass data storage with solid-state drives (SSD) from 80 GB or CFast drives from 4 GB as well as 512 kB nonvolatile retentive memory (NVRAM, optional) ensure a high level of data security. With its sealed metal housing, the IPC227E provides the highest industrial functionality even under harsh conditions. Thanks to three mounting options, it can be flexibly installed in small control boxes. There are four status LEDs and preinstalled software for device diagnostics.

The Simatic IPC277E Nanopanel PC is available with a high-resolution industrial touchscreen in wide-screen format and with a wide viewing angle, in 7-, 9-, 12-, 15-, and 19-inch sizes. New features include a switchable serial interface (RS232 / RS485 / RS422) and an additional display port interface as in the Simatic IPC277E. In case of IPC277E as back-

ground lighting is adjustable up to 100%, power consumption can be reduced considerably.

All versions of the IPC227E/IPC277E are equipped with one USB 3.0 port and additional USB 2.0 ports. Both devices have two teaming-capable Gigabit Ethernet interfaces, one of which can be used as a Profinet interface with real-time functionality. Uses range from an automation computer with a software controller to a C/C++-based automation solution to general "stand-alone" IT applications.

The industrial PCs with long-term availability are configurable online and are supplied with a preinstalled and activated operating system: Windows Embedded Standard 7-E or 7-P, Windows 7 Ultimate – all with 32 or 64 bit. Additional there is a suited-for-Linux certificate and support package for VxWorks. Ready-to-run computer and software bundles enable rapid commissioning. ■

[siemens.com/ipc](http://siemens.com/ipc)

## New features

- Up to four times higher performance than the previous generation
- Optimization for use as a data gateway as well as for control and visualization tasks
- Easy integration into automation solutions with TIA Portal and the onboard Profinet interface
- Selectable serial RS232 / RS485 / RS422 interface; Display Port interface also in the Simatic IPC277E Nanopanel PC

## Simatic IFP1900 Pro / Simatic IPC477D 19" Pro with IP65 protection

### In wide-screen format for every occasion

A new 19-inch flat-panel and panel PC with comprehensive IP65 protection expand the portfolio of glass-front devices. The rugged aluminum enclosure of the Simatic IFP1900 Pro and the Simatic IPC477D 19" Pro allow operators to use them directly on the machine even under harsh environmental conditions. The control units can be mounted on the stand and connected to the support arm either from the top or from the bottom.

The wide-screen devices have a continuous glass front, which is nonreflective for good legibility. The projected capacitive touch (PCT) screen enables mechanical engineers to develop an innovative operating approach with intuitive gestures and a multi-touch interface. Perfectly adapted to harsh environments, these devices can also be operated when wearing work gloves. ■

[siemens.com/ipc](http://siemens.com/ipc)



#### New features

- Wide-screen devices with comprehensive IP65 protection
- Slim and attractive design
- Brilliant color display thanks to continuous glass front
- Gesture, single-touch, and multi-touch operation

## IFP1900 / IFP2200 industrial flat panels with Ethernet interface

### Unlimited distance from the server is possible

An Ethernet interface now expands the options for using industrial flat panels. Previously, they could only be used, via the DVI graphics interface and display port, up to a maximum distance of 30 m from the server. The connection via an Ethernet interface now allows operators to use the IFP1900 and IFP2200 industrial flat panels without any limitation on distance from the server.

A standard CAT cable transmits video and USB signals. On the PC side, only a standard Ethernet interface is needed. Up to four monitors, which are equipped with a continuous glass front and projected capacitive touch (PCT) screen, can be connected to an IPC at one time. This allows for Extended

Desktop and Clone modes. The connection via Ethernet rather than via a graphics interface allows greater flexibility in the development and implementation of distributed control concepts in machine and plant engineering. At the same time, the lower cabling expenses save time and money. ■

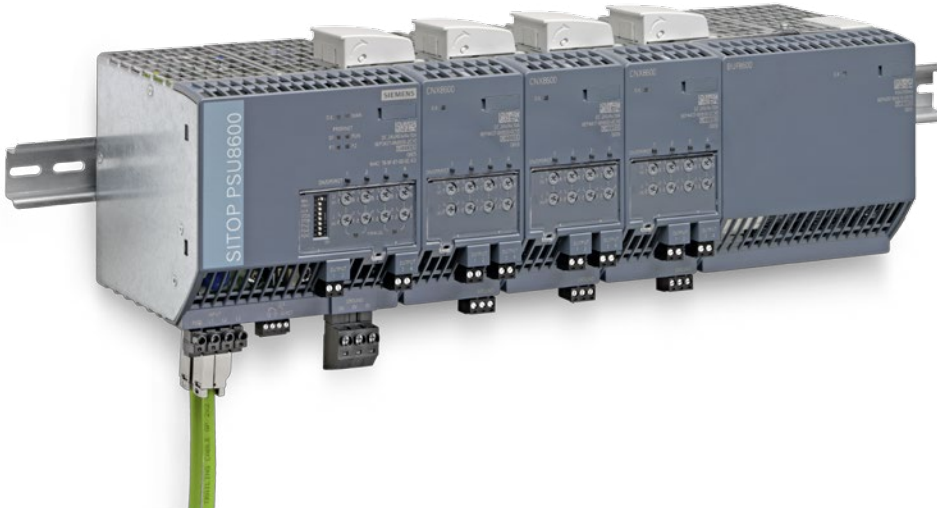
[siemens.com/ipc](http://siemens.com/ipc)



#### New features

- Unlimited distance from server when used via Ethernet interface
- Up to four monitors on one IPC
- Increased flexibility in the development of distributed control concepts
- Cost savings in cabling
- Gesture, single-touch, and multi-touch operation

A reliable power supply is a prerequisite for efficient system operation. The portfolio of Sitop power supply units and expansion modules protects against system downtimes and lost production in any industry worldwide.



## Sitop PSU8600

### Full transparency in the control circuit

The new Sitop PSU8600 power supply system facilitates the DC supply of a machine or plant transparent for the first time. It measures the current and voltage of each of its up to 16 DC load circuits and provides the automation system with the values via Ethernet or Profinet. This offers new possibilities for diagnostics, maintenance, and energy management in the DC circuit.

The basic unit divides the output voltage over four load circuits of 10 A nominal current each, monitors them for overloads and short circuits, and selectively switches off a faulty load circuit. The tripping current is adjustable from 0.5 A to a maximum of 10 A. For each output, a maximum current and a current threshold at which a message is generated can be set via TIA Portal. This means that any overcurrents differing from fault-free operation are indicated and errors can be located and eliminated before the equipment becomes non-functional and the load circuit is switched off.

The continuous diagnostics for each load circuit ensure the transparency of energy flows in the control circuit and allow their integration into energy management systems. Load circuits can be turned off via the Profienenergy protocol to save additional energy during idle times.

The outputs can be individually switched on when the power supply is activated: all at once, with a time delay, or in a load-optimized manner, which minimizes the total inrush current. Outputs 1 and 2 as well as 3 and 4 can be connected in parallel and operate with an output current of up to 20 A each. The voltage on each output is continuously adjustable. The large voltage range, from 11 to 28 V, can compensate for cable voltage drops. No additional power supplies are needed. If the power supply is integrated into an automation solution, the output voltages can also be changed by a control program. The Sitop PSU8600 basic unit with three-phase wide-range input from 320 to 575 V requires only 125 mm on the DIN rail. The compact 40 A power supply has an efficiency level of 94% and provides 1.5 times the nominal current for 5 s/min for an efficient and reliable supply. The Ethernet/Profinet interface with two integrated ports allows for comprehensive data exchange via automation networks with a linear or a ring structure.

If more than the four outputs that are integrated into the basic unit are needed, the number of channels can be increased using expansion modules in increments of four outputs, up to a total of 16. Users can choose between two

expansion modules with  $4 \times 5$  A or  $4 \times 10$  A. These are simply placed next to the base unit on the DIN rail and connected using the "System Clip Link" folding connector. Buffer modules ensure mains buffering up to 600 ms at 40 A, and correspondingly longer at a lower load current.

The system can easily be integrated into automation solutions via Ethernet/Profinet. Engineering is performed quickly and easily in TIA Portal. Predefined function blocks allow easy integration into Step 7 user programs, and there is a free GSD file for programming in Step 7 V5 as well as an HSP for TIA Portal V13. In addition, there are customized PSU

faceplates for operation and monitoring with Simatic panels and Simatic WinCC, which reduces engineering overhead, saving time and money. The system reports utilized capacity of the overall system and operating states of all outputs. It also warns if the maximum temperature is exceeded. Information about power and phase failures is also reported. Everything can be evaluated using Simatic S7 and visualized in WinCC. An integrated web server is used for remote visualization. ■

[siemens.com/sitop-psu8600](http://siemens.com/sitop-psu8600)

## New features

- Comprehensive monitoring and diagnostics during operation for preventive maintenance
- Power management support via energy data detection and selective switching of outputs
- Up to 16 integrated outputs that can be selectively monitored and individually parameterized
- Modular expandability without any wiring
- Integrated Ethernet/Profinet communication for optimal integration into machine or plant automation
- Engineering in TIA Portal and in Step 7
- Free function blocks for Simatic S7-300/400/1200 and 1500 and also faceplates for Simatic WinCC

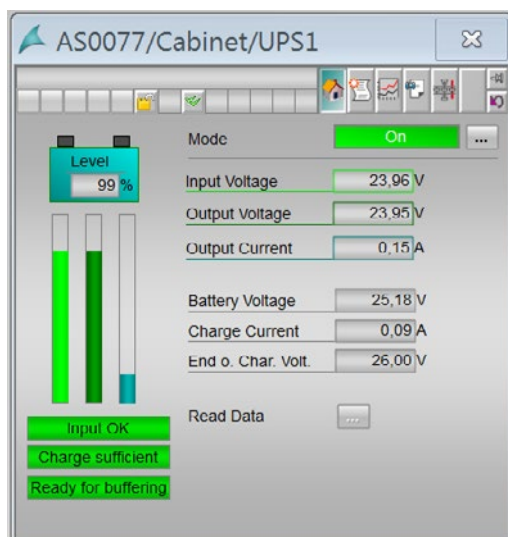
### Sitop UPS1600

## DC UPS integration in Simatic PCS 7

For the Sitop UPS1600 uninterruptible DC power supply modules with an Ethernet/Profinet interface, a library for direct integration into the Simatic PCS 7 process control system is now available. The UPS1600 software modules in Simatic S7 supply operational and diagnostic data to the faceplate of the user interface of the process control system, generate reports,

and provide connection to the Simatic PCS 7 maintenance system. Thanks to these properties, a high level of transparency is guaranteed in the 24 V DC supply via the Sitop UPS1600 in Simatic PCS 7. The operating states of the UPS, such as buffer operation in case of power failure and diagnostic information on the UPS and its associated energy storage, for example, the preventive replacement of battery modules, are all immediately identified. This means that critical system states can be quickly identified, costs associated with downtimes can be avoided, and system availability is sustainably increased. ■

[siemens.com/sitop](http://siemens.com/sitop)



## New features

- Integration of the Sitop UPS1600 in the Simatic PCS 7 process control system via Ethernet/Profinet
- Automatic information on operating states, maintenance information, and faults
- Readout and display of device data
- Free download of software modules and documentation via Service and Support



## Drive system with synchronous-reluctance technology

# High efficiency for economical operation

The Integrated Drive Systems (IDS) portfolio has been expanded with a new drive system with synchronous-reluctance technology. This drive system is characterized by a very high degree of efficiency at the nominal operating point and under partial loads. The Simotics reluctance motor and Sinamics converter are perfectly matched as an Integrated Drive System. They provide much more efficient operation than asynchronous motors.



**T**he new drive system is based on the proven 1LE1 motor platform and is specifically optimized for the Sinamics G120 inverter. The Simotics reluctance motors cover in the first step a power range from 5.5 to 30 kW and are available with aluminum enclosures for general environmental conditions (Simotics GP) as well as with gray cast iron enclosures for harsh environmental conditions (Simotics SD). Commissioning is particularly easy thanks to a motor code that can be entered at the inverter, which ensures preconfigured parameters. The highly dynamic reluctance motors offer considerably higher efficiency under partial load conditions compared with asynchronous motors with the same power rating. The synchronous principle means that the speed remains constant, and sensorless vector control ensures optimum performance. Both of these properties facilitate the highly

precise control of the drivetrain. Ramp-up times are short thanks to the motor's low inherent moment of inertia combined with the vector control. The low losses in the rotor allow a very high thermal utilization of the motor. The Simotics reluctance motor is similar to the 1LE1 asynchronous motors in design and operation.

### Vector control in converter

The Sinamics G120 standard inverter provides vector control specifically for the reluctance motors. The pole position identification prevents jerking movements of the drive on activation. A flying restart circuit enables synchronization with the running motor. Profibus and Profinet interfaces make it possible to integrate the drive system into the



automation environment by means of Totally Integrated Automation (TIA). Reluctance technology is used in process engineering with pumps, fans, compressors, mixers and centrifuges, and conveyor systems, and in mechanical engineering. ■

[siemens.com/reluctance-drive-system](http://siemens.com/reluctance-drive-system)

Siemens offers a complete solution for drive technology, which can be seamlessly integrated into any automation environment and into the entire lifecycle – for greater efficiency, reliability, and productivity.



### Simotics DP marine motors

## Quick planning and acceptance

With Simotics DP, Siemens now offers new marine motors based on the well-proven 1LE1 motors. With an aluminum or gray cast iron enclosure, as a standard model or a specific variant for potentially explosive environments (ATEX engines), the motors are available in various power ranges: with an aluminum enclosure and a power range of 0.37 to 45 kW, with a gray cast iron enclosure and a power range of 0.18 to 200 kW, or as an Ex motor for zones 2/21/22 with a power range of 0.37 to 200 kW. All models are precertified for use belowdecks. This saves the customer time, especially in planning and obtaining overall ship approval. The fixed-speed motors can also be connected to the converter and thus form an Integrated Drive System (IDS), with which the energy efficiency of the drive can be increased regardless of the energy efficiency class of the motor. With precertified Simotics DP marine motors, customers can tap great energy savings potential by choosing from the energy efficiency classes IE1 to IE4. The various designs and power ranges fulfill a wide variety of requirements. The motors are used primarily in shipbuilding, ship compressors, feed pumps, and winches. They are also used in harbor cranes and platform-mounted hydraulic pumps. ■

[siemens.com/simotics-dp](http://siemens.com/simotics-dp)



### New features

- Motor variants with power ranges from 0.18 to 200 kW
- Large energy savings potential due to selectable efficiency of IE1 to IE4
- Time savings during planning, delivery, and acceptance with precertified engines
- Combination with a converter enables creation of an Integrated Drive System (IDS)

### Simotics HV M high-voltage modular motor

## Reduced project planning time

Siemens is expanding its portfolio of modular high-voltage motors with the even higher-performance Simotics HV M series with a shaft height of 800 mm. In the four- and six-pole versions, power ratings of up to 18 MW at 6 kV (50 Hz) are attainable, extending the advantages of a modular motor design to users in this performance class. Standardized production and test processes reduce delivery times, increase delivery reliability, simplify spare parts storage, and increase plant availability. Integration into drive design tools such as Sizer can considerably reduce project planning times. Additionally, the tool supports the user in configuring system components.

A variety of options allow the Simotics HV M motors to be perfectly tailored to individual applications: special coating systems, for example, protect against salty or other aggressive environments. In the Ex p or Ex n version, the motors are suitable for use in potentially explosive environments. Versions are optionally available for use at extremely low temperatures, down to -50°C, or in applications with strict vibration class requirements in accordance with the API standard. As a result, Simotics HV M motors are particularly well suited for use in compressor applications such as gas pipelines, gas tanks, rolling mills, and marine motors.

In combination with Sinamics medium-voltage converters, the motors form an Integrated Drive System. This optimal design matching of all components increases the efficiency and reliability of the plant. ■

[siemens.com/simotics-hv-m](http://siemens.com/simotics-hv-m)

### New features

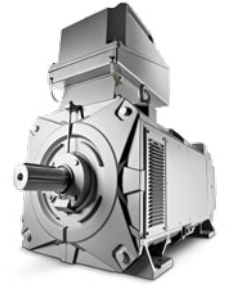
- New Simotics HV M in 4- and 6-pole versions with power ratings of 16 MW at 10 kV and 18 MW at 6 kV (50 Hz)
- Available with Sinamics medium-voltage converters as an Integrated Drive System (IDS)
- Increased plant availability and short lead times

**Simotics FD****Entire power range covered**

Siemens now covers the entire power range for applications in many industries such as cement, mining, steel, and chemicals with the new Simotics FD low-voltage motors in the power range from 200 to 1,600 kW and with shaft heights from 315 to 450 mm. The motors are optimized for converter operation and are particularly energy efficient, especially in the partial load range. In combination with Sinamics low-voltage converters, they form an Integrated Drive System (IDS) that meets the requirements of the IES2 system efficiency class. This means that losses are reduced by 35% compared with the standard reference system

EN 50598. The modular design provides customers with the flexibility to choose between air cooling and water cooling or between self-ventilation and forced ventilation. Efficiency can be further increased through heat recovery in the water-cooling version. The new Simotics FD is particularly easy to connect, since the large-format terminal box can be rotated in increments of 90° and is diagonally divided. Comprehensive service, ranging from online condition monitoring to repairs to retrofitting, is ensured via the global service network. ■

[siemens.com/simotics-fd](http://siemens.com/simotics-fd)

**New features**

- Full line of Simotics FD motors in the power range from 200 to 1,600 kW
- Modular design for high flexibility and optimal adjustment of the motor to individual applications
- IDS comprising Simotics FD motor and Sinamics frequency converter that meets the requirements of the IES2 system efficiency class

**Simotics S servo-gearred motors****Suitable for any task**

In conjunction with the Sinamics frequency converters, the new Simotics S-1FG1 servo-gearred motors impress with their seamless integration into the drivetrain and the automation structure. Thanks to standardized connections and fixing dimensions, the new products can be easily integrated into machines and systems or installed to replace existing units during maintenance. Four gear types – spur, flat, bevel, and worm gear – and finely graduated ratios make it possible to find a

drive that offers the ideal design and performance for any application. ■

[siemens.com/servo-gearred-motors](http://siemens.com/servo-gearred-motors)

**New features**

- High level of flexibility due to 4 different gear types
- Use of 2-stage instead of 3-stage gears possible in some cases
- Up to 2% more efficiency and reduced heat generation with 2-stage gearbox
- Optimal connection to Sinamics S110 and S120 via Drive-Clig

**Simotics T segment motors****Direct drives in a new dimension****New features**

- Minimal maintenance and high drive stiffness, acceleration, and momentum due to gearless drive
- High-performing rotary actuator with high true concentric accuracy, thanks to lack of selective radial forces
- High availability, with operation possible even if individual motor segments fail

The new segment motors are built-in torque motors whose stators and rotors are constructed as segmented components. The motors are based on the Simotics motor portfolio and are operated with the Sinamics S120 drive system. Segment motors are used in rotary tables for high-output complete machining centers, rotary transfer machines, roller drives, and actuators. ■

[siemens.com/simotics](http://siemens.com/simotics)

**Sinamics V90 servodrive system****Optimized performance and ease of use**

A new servodrive system is now available, consisting of a Sinamics V90, the new member of the Sinamics family of power converters, and the new servomotor of the Simotics S-1FL6 motor family. The performance-optimized and easy-to-use system covers a power range from 0.4 to 7.0 kW and allows for motion control functions such as internal positioning, positioning with pulse sequences, and speed and torque control. With the servodrive system, customers can increase the performance of their plants, reduce costs, shorten commissioning times, and thus improve competitiveness. The system can be used worldwide in textile and packaging machines and conveying technology, as well as in many other drive systems in the process and manufacturing industries. ■

[siemens.com/sinamics-v90](http://siemens.com/sinamics-v90)

**New features**

- Reliable motor-converter combination:
  - Sinamics V90: four sizes with a power range of 0.4–7.0 kW
  - Simotics S-1FL6: three axis heights: AH45, AH65, AH90
- Integrated braking resistor in all frame sizes
- Auto-tuning for high dynamic performance
- Easy commissioning with Sinamics V-Assistant

**Liquid-cooled Sinamics S120 CM****Efficient cooling system**

The newest addition to the Sinamics S120 modular cabinet system is the modular liquid-cooled version. The liquid cooling requires significantly less energy than air cooling. Heat is transferred to the coolant and not to the environment, and thanks to the Active Interface Module, the system perturbations are very low.



The low-noise liquid-cooled Sinamics S120 CMs (cabinet modules) can be combined flexibly and require less space than air-cooled motors. Since high protection classes of up to IP54 are easy to implement, these systems offer maximum power and performance even in harsh environments

such as in the steel industry, in mining, and in the automobile or process industries. ■

[siemens.com/sinamics-s120-cabinet-modules](http://siemens.com/sinamics-s120-cabinet-modules)

**New features**

- Efficient cooling system with continuous liquid cooling
- Flexible modular combination possibilities
- Small footprint
- Ideal for harsh environments

**Sinamics G110M****New accessories**

New accessories are now available for the Sinamics G110M. With the new maintenance switch, the Sinamics G110M input side can be separated from the 400 V level of the power supply. The switch can be protected against accidental activation with up to three locks. Similar to the already available DC 24 V power supply, the maintenance switch can be mounted to the side of the Sinamics G110M. It is compatible with all power modules and control units and can be used on Simogear geared motors in both the close-coupled variant with the wall mounting kit, and in the motor-mounted variant. With the wall mounting kit it is possible to use the Sinamics G110M both motor-integrated on Simogear and close-coupled to the motor in applications where the motor-integrated variant has no space or the frequency converter is to be used closely coupled to the motor. ■



[siemens.com/sinamics-g110m](http://siemens.com/sinamics-g110m)

**New features**

- Maintenance switch to disconnect 400 V power supply
- Wall mounting kit for close-coupled use



## Sirius ACT commanding and signaling devices

# High quality and highly flexible

The Sirius ACT brand name refers to a unique portfolio of small top performers ranging from push buttons to indicator lights. These devices, available in four new design series, are made of robust solid metal and high-quality plastic, and offer new functionalities and communication links.



**S**irius ACT is a modular system of commanding and signaling devices for front-panel mounting and rear-mounted electrical modules. The electrical module is permanently integrated into the compact unit and only needs to be mounted into a holder. The devices are available in two plastic versions with a diameter of 22 mm and a black plastic ring or metal front ring, and two metal versions with a diameter of 22 mm or 30 mm and a metal front ring. They all feature top-quality design and materials.

The various possible combinations offer appropriate solutions for every application, every taste, and every budget. The cascadable contact and LED modules are mounted in holder slots without tools. The modules can be delivered with screw, spring, or solder pin connections. The holders, for mounting three modules side by side, are available in either plastic or metal. The contact modules are stackable as well.

### Easy operation, extreme ruggedness

A screwed connection with 100% twist prevention means that keyed holes are not needed for device installation. Only one hand is required for installation, thanks to the innovative snap-on design. The risk of incorrect installation is minimized.

Even inclined mounting is possible. To remove the device, the operator simply presses the release lever.

Thanks to the high degree of protection (IP69K), the devices can safely be cleaned with a high-pressure jet at high temperatures. Dust, oils, caustic solutions, and extreme environmental conditions do not affect the reliable operation of the devices. With their high mechanical durability, the devices are a rugged solution for many applications. They are also suitable for outdoor use and for use in potentially explosive areas.

### Flexible communication

The new command and signaling devices also deliver strong performance when it comes to communication. In addition to standard wiring, they can be connected directly to the control system in the field via AS-Interface or to the control cabinet via IO-Link. This reduces wiring requirements, minimizes errors, and increases flexibility. An online configurator makes the selection and ordering of the devices easy for the operator. Enclosures and labelings can be easily combined to meet the customer's specific requirements. ■

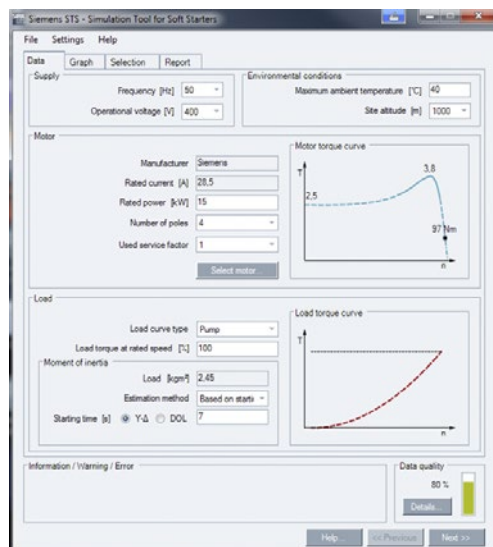
[siemens.com/sirius-act](http://siemens.com/sirius-act)

## Sirius Simulation Tool for Soft Starters (STS)

### Easily finding the right soft starter

The new STS software tool (Simulation Tool for Soft Starters) for quick and easy designing of Sirius soft starters has a user-friendly interface. Users only need to enter the motor and load data to simulate the application and obtain recommendations for suitable soft starters. The appropriate soft starters are clearly displayed in a tabular view.

[siemens.com/softstarter](http://siemens.com/softstarter)



### New features

- Simple, fast, and user-friendly interface
- Detailed and up-to-date Siemens motor database, including IE3 motors
- Update capable (e.g., motors, functions)
- Fast simulations with only a few input data
- Immediate display of starting curves with limiting values
- Tabular view of suitable soft starters for the given application



## Simocode pro V Modbus

### Motor management now with additional fieldbus communication: Modbus RTU

The Simocode pro motor management system can now also be integrated into the process control system via Modbus RTU and can thus communicate with a range of control systems in the chemical, oil and gas, water, cement, and mining industries. The new Simocode pro V Modbus RTU basic unit is compatible with all the components of the Simocode pro V system. The well-proven entry and expansion modules and control blocks, as well as the DM-F Local security module, can also be used with Modbus. In addition to the Modbus connection, the motor management system supports the Profibus, Profinet, and OPC/UA industrial communication protocols and can thus be used flexibly in any environment. Simocode pro is easily parameterized with the Simocode ES V13 software, which includes an integrated graphics editor for clear and quick configuration. A variety of diagnostic information is also available for ease of maintenance and rapid response in the event of a fault.

[siemens.com/simocode](http://siemens.com/simocode)

### New features

- Ability to be used in Modbus-based automation and control system solutions for the process industry, particularly in the oil and gas industry
- Full electronic motor protection with comprehensive operating, service, and diagnostic data, independent of the automation system
- Compatibility with the well-proven components of Simocode pro
- Easy parameterization and configuration with Simocode ES V13

Whether switching, protecting, starting, or monitoring, the Sirius modular system offers a coordinated portfolio of industrial controls that can be easily installed in control cabinets and integrated into distributed systems.

## Sirius 3RQ3 coupling relays / Sirius 3RS70 interface converters

### Space-saving design, easy installation

Siemens has updated its coupling relay and interface converters product families. The new Sirius 3RQ3 coupling relays and Sirius 3RS70 interface converters now have a uniform titanium gray housing design and thus visually match the other Siemens units in the control cabinet.

The new Sirius 3RQ3 provide relay and solid state output for long life and silent, wear-free switching. The new Sirius 3RS70 interface converters are offered only with modern galvanic three-way isolation and convert a variety of signals into standard analog signals. The galvanic isolation of the input, output, and power supply effectively prevents interference and enables the transmission of highly accurate analog signals.

The narrow width of 6.2 mm, as well as the similarly decreased depth and height of the new devices, is ideal for use in confined spaces in control cabinets with small line spacing or in flat switch boxes.

The Sirius 3RQ3 and 3RS70 are simple and efficient and, if desired, can be wired without tools. In addition to the screw terminals, push-in technology is now available in all spring-loaded terminals. Thanks to an easily accessible test opening for voltage measurement, it is possible to check the correct functioning of the device. Potentials can also be continuously bridged across many devices using an optional connecting comb. ■

[siemens.com/relays](http://siemens.com/relays)



#### New features

- Slim, compact design with 6.2 mm width
- Particularly space-saving format for flat switch boxes or control cabinets with small line spacing
- Continuous bridging that makes additional wiring unnecessary
- Screw and spring-loaded terminals in all variants

## Sirius 3SK2 safety relays

### Safety is a "Sirius" business

The product family of Sirius 3SK1 safety relays has now been expanded to include 3SK2 devices. The narrow 3SK2 basic unit has 10 failsafe inputs and 2 failsafe outputs. With a width of only 22.5 mm, it is the narrowest software-parameterizable safety relay on the market. While all failsafe outputs are switched off simultaneously with the well-established Sirius 3SK1, the new 3SK2 devices now allow failsafe outputs to be

switched off independently. Using simple drag and drop, the user can define which sensor should act on which failsafe output or outputs. Certified software modules are available for this purpose. This means that parameterization of the safety functions can easily be transferred to the new 3SK2 basic units without any programming knowledge. The software also contains numerous diagnostic and testing functions that make commissioning easy. The new Sirius 3SK2 basic units offer more features as well – for example, a safety door with tumbler mechanism and muting for material feeding. In addition, the modular design allows the outputs on the 3SK basic units to be expanded as needed. ■

[siemens.com/safety-relays](http://siemens.com/safety-relays)



#### New features

- Independent switch-off of failsafe outputs
- Maximum functionality in minimal space
- Numerous diagnostic and test functions to make commissioning easy (e.g., "forcing")
- Seamless integration option for the Sirius 3RM1 failsafe motor starter



## Simatic RF600

# Easy operation and diagnostics

UHF RFID systems offer many advantages when it comes to identifying objects along the supply chain. With its new generation of readers, Siemens delivers important functionality, enabling plant owners to implement UHF projects quickly and cost-effectively.

The new generation of UHF readers from Siemens comprises three devices with different functions and performance categories. They offer a variety of options to reduce costs for project execution and downtimes. The integrated software, for example, features commissioning and diagnostics tools, and the Simatic RF685R reader is equipped with an adaptive antenna for particularly high coverage.

### Reliable readers for production

The UHF reader Simatic RF680R with four connectors for external antennas and the Simatic RF685R with one integrated antenna and one external antenna connector are primarily designed for use in automation environments – for example, in production lines. Due to their high protection degree (IP65), the devices are also feasible for applications in production-related processes, e.g. logistics or flow of materials. The integrated dual-polarization antenna is the key feature of the RF685R. When plants are being designed, it is not always immediately clear which kind of antenna (linear or circular polarization) will lead to the highest reading rate. The RF685R makes that decision easy: The reader can switch automatically between both modes, increasing both reading and writing reliability. Furthermore, the RF685R also masters difficult identification tasks in highly reflecting environ-

ments. With the integrated Profinet port, the UHF reader can be easily integrated into Simatic S7 automation systems using the appropriate function blocks. The device is configured in TIA Portal. Diagnostics can be performed during operation, either via remote control or locally via a second Industrial Ethernet connection, without interfering with the control system.

### Powerful readers for logistics

The Simatic RF650R UHF reader is an economical alternative for logistics applications that do not require integration into automation systems (PLC) or a special degree of protection.

### Easy integration and diagnostics

All the devices in the new generation of readers can be integrated into IT environments using Ethernet, TCP/IP, and XML protocols. The integrated web server makes it possible to commission, configure, and troubleshoot all three types of devices – RF680R, RF685R, and RF650R – via web-based management. It is not necessary to install additional software on the PC or update existing configuration and diagnostics software. ■

[siemens.com/rf600](http://siemens.com/rf600)



## Simatic RF622L and RF622T transponders

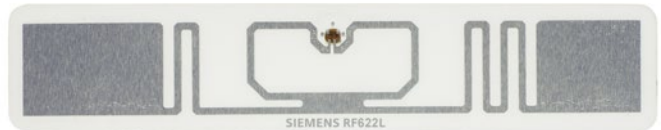
### Faster writing with more data

The Simatic RF600 product line for identification applications in production and logistics has been expanded with the introduction of new transponders. The Simatic RF622T and RF622L transponders offer significantly larger data storage than previous UHF-RFID data carriers, with 4 KB now available for the first time. This means that tagged objects can store significantly more data, allowing distributed structures and quicker data access for production control, asset management, and intra-logistics. FRAM memory technology provides for high writing speed and allows writing cycles as often as required.

The Simatic RF622L is suitable as a cost-effective smart label for permanent product labeling and can be printed individually off a roll, for example, with plain-text or additional optical codes. The robust and hardened Simatic RF622T transponder allows the equipping of objects such as pallets or containers. The optional spacer also facilitates direct mounting on metal surfaces. The RF622T transponder dimension is 120 x 30 x 6,5 mm, and those of the RF622L smart label are 90 x 18 x 0,5 mm. The read/write distance is up to 3 m. ■

[siemens.com/rf600](http://siemens.com/rf600)

Simatic Ident enables the smooth and consistent traceability of goods flows in industrial processes. Depending on the application, RFID solutions are based on radio waves or optical code-reading systems.



### New

- RFID transponders with high range and high storage capacity (4 KB) for production and logistics control
- FRAM technology for high-speed writing and any number of writing cycles
- Direct mounting also on metallic surfaces

## Simatic RF650M handheld

### Reader for fatigue-proof operation

A new mobile reader has joined the RF600 product family for identification applications in production and logistics. The Simatic RF650M mobile handheld reader captures data from transponders in logistics applications, asset management, or for service purposes. A range of up to 3 m also allows the reliable bulk capture of transponder data.

The color touch display with a resolution of 240 x 320 pixels facilitates an easy and reliable operation just as the rugged keypad and the large trigger button. Particularly practical: the RFID antenna is foldable to save space, for example, when the device is carried in

a pocket. Then, the dimensions are only 147 x 60 x 39 mm. The light weight of 235 g, including the battery, also enables fatigue-proof operation. With a battery life of up to nine hours, the device can be used for the duration of at least one shift without recharging. Customers can create their own applications based on the Microsoft Windows Embedded operating system to further customize the device to meet their specific requirements. For service purposes, the supplied RFID software can also be used for reading and writing from and to transponders. ■

[siemens.com/rf600](http://siemens.com/rf600)



### New

- Handheld reader for logistics and service applications
- Designed for fatigue-proof operation
- Light weight, long battery life, space-saving antenna

## Ruggedcom RX1400

# Rugged router for wireless broadband communications

The new Ruggedcom RX1400 is a multiprotocol intelligent network node with integrated firewall. The robust device, deployable as an Ethernet switch and router, enables various options for broadband connectivity to wide area networks (WANs).



without the use of fans and operates reliably at extreme temperatures from -40°C to +85°C. The integrated GNSS (GPS/GLONASS) functionality allows the router to report its location as necessary for asset tracking purposes, even in large-scale systems.

## Large-scale connection of network components

The Ruggedcom RX1400 is a cost-effective solution for large-scale connection of network components to a WAN. The router is primarily designed for communication over commercial LTE networks. For this purpose, it supports comprehensive LTE (Long-Term Evolution) functions to ensure the quality of service. If LTE is not available, the device can also communicate via 2G and 3G. In addition the cellular router is equipped with a dual SIM card slot which enables automatic failover in case of interruption in the communication. Users can combine the device with two small form-factor pluggable (SFP) fiber-optic transceivers to set up wired communication as necessary. Thanks to the optional Layer 3 security license, the integrated hardware encryption engine enables high-performance IPsec traffic without utilizing the main processor.



**T**he Ruggedcom RX1400 wireless service router is IP40 rated and comes with a rugged metal housing. It supports flexible installation via DIN rail, panel, or rack mounting in the switch cabinet. In addition, it provides a high level of resistance to harsh conditions such as electromagnetic interference, extreme humidity, and significant electrical surges. The unit also runs

## Well suited for harsh environments

Equipped with comprehensive security functions, the device is particularly well suited for critical applications in which availability and secure communication are crucial. Typical applications include oil and gas installations, utility substations, control cabinets in traffic and transportation systems, and similar applications in harsh environments. ■

[siemens.com/rx1400](http://siemens.com/rx1400)

## Scalance M876-3 / Scalance M876-4

### High- bandwidth mobile wireless routers



From the simple connection of a sensor to the recording and reporting of all quality and production data in a factory – Siemens' complete offering for industrial communication enables efficient integration of all business divisions.

Siemens is expanding its Scalance M series of mobile wireless routers with the addition of two new devices. The Scalance M876-4 allows to connect Industrial Ethernet-based subnets and automation devices over LTE (Long-Term Evolution). The Scalance M876-3 is ideal for data transmission via 3G wireless internet access technologies. In Europe, these are the well-known UMTS (Universal Mobile Telecommunications System) networks and, especially in North America, the widespread EVDO (Evolution-Data Optimized) networks. In addition to a built-in four-port switch, the new mobile wireless routers feature two antenna connections. This enables the use of antenna diversity, which enhances the signal quality and increases the bandwidth. The routers also feature a digital input and output and a redundant power supply. With the new mobile wireless routers, users can access IP-based end devices worldwide. Security functions such as the integrated firewall and the end-to-end encryption of the communication link, also called VPN tunneling, protect all communication. The

high bandwidth, performance, and speed of the two routers make them perfect for use in diverse industrial and semi-industrial applications – from teleservice to the connection of remote substations to video surveillance. ■

[siemens.com/remote-networks](http://siemens.com/remote-networks)

### New features

- LTE data rates of up to 100 Mbit/s in the downlink and up to 50 Mbit/s in the uplink (Scalance M876-4)
- Data transfer rates of up to 14.4 Mbit/s in the downlink and up to 5.76 Mbit/s in the uplink via HSPA+ and EVDO (Scalance M876-3)
- IPsec and OpenVPN for secure communication
- Compact housing in the Simatic S7-1500 design for space-saving installation in control cabinets

## Scalance PS924 PoE and PS9230 PoE

### Power for Scalance XM-400

The two new power supplies, the Scalance PS924 PoE, supplied with 24 V DC on the input side, and the Scalance PS9230 PoE, supplied with 120/230 V AC on the input side, are specifically designed for Power over Ethernet (PoE) applications and are ideal for use with the PE408PoE extender module from the Scalance XM-400 product line. With PoE, the supply voltage for the connected devices and the data are both transmitted from the switch via the same cable. Typical devices, referred to as powered devices (PDs), include WLAN access points, RFID readers, cameras, and IP phones. Up to 30 W per port are available for the PDs.

The Scalance XM-400 Layer 3-capable Industrial Ethernet switches are extendable by various port extenders and plug-in transceivers, for a maximum configuration with up to 24 full-Gigabit ports. Two PS-900 power supplies can be connected to each PE408 PoE port extender. One PS-900 supplies 86 W, so it can supply up to four ports on the PE408 PoE. Installation is straightforward due to the limited power source rating (LPS/NEC Class 2). Even in harsh environments, the PS-900 provide high reliability and space-saving installation, thanks to their compact design and DIN rail mounting. ■

[siemens.com/x-400](http://siemens.com/x-400)



### New features

- PoE power supply ideally suited for Scalance XM-400
- 54-V DC output voltage specifically designed for PoE IEEE 802.3at
- Temperature range from -40°C to +70°C



## Control Performance Analytics

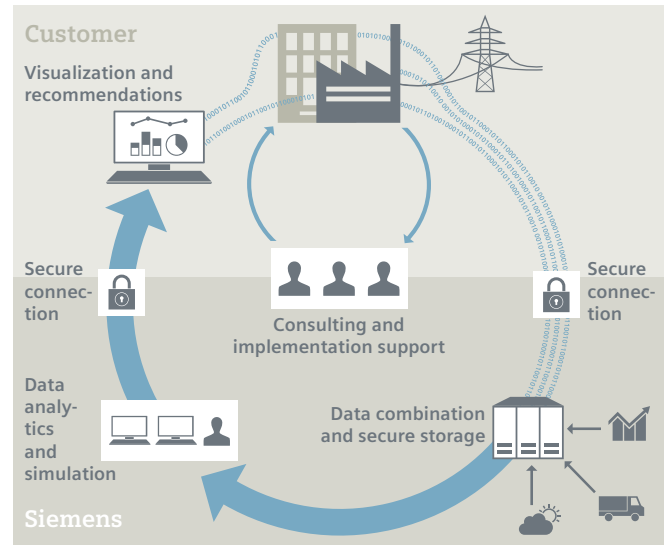
### Control performance monitoring

Control Performance Analytics, a new cloud-based service for the process industry, monitors control performance during running operation. Control performance does not remain constant over the lifecycle of a control loop, so continuous adjustments are needed to meet changing production goals, to prevent wear and tear, and to improve the efficiency and productivity of the entire plant.

This cost-effective service is quickly implemented and does not disrupt any running processes. First, a data collector, such as a Nanobox PC, is installed on-site, which records the process data of the control loops previously selected by the plant operator. The data are then transferred to a Siemens Operation Center, adhering to strict security standards. The customer receives the results of the data analytics as well as recommendations for optimization in the form of reports accessed via a dedicated web portal.

The flexible service is offered in scalable packages and is recommended, for example, for use in the chemical and pharmaceutical industries, food production, and oil and gas processing, as well as the glass and solar industry. ■

[siemens.com/plant-data-services](http://siemens.com/plant-data-services)



### New features

- Quick plug-and-play installation
- Continuous analysis of process data for control loops
- Recommendations for plant optimization
- Enhanced process efficiency, quality, and productivity

## Sipus CMS4000 with ATEX certification

### Condition monitoring for potentially explosive atmospheres



### New features

- Approval for class 2 potentially explosive atmospheres
- Compliance: ATEX II 3G / Identification: Ex nA IIC T4 Gc for flammable gases, vapors, and mists: ATEX Group 3G and for atmospheres containing hydrogen, acetylene, and carbon disulfide: explosion hazard subgroup IIC

In many industries, the manufacture, processing, transport, and storage of combustible materials results in the generation of various gases, vapors, and mists, and in other processes, combustible dusts. In combination with oxygen in the air, this can give rise to an explosive atmosphere. To prevent ignition, danger zones must be defined, and equipment certification is required. The Sipus CMS4000 condition monitoring system can be used in class 2 potentially explosive environments without any special measures or additional certification procedures.

The Sipus CMS4000 constantly monitors all the machines and the entire plant. The interface nodes (IFNs) on the Sipus CMS4000 are ATEX II 3G compliant and include IFN AI for recording measurement data from six analog process signals such as pressure, strain, wind speed, and torque measurement; IFN AI-D for distance measurement of up to three bearings by up to six distance sensors; IFN VIB-ACC for vibration acceleration measurement by up to six IEPE sensors; and an MCN11 network component for bridging distances of up to 500 m. ■

[siemens.com/sipus-cms](http://siemens.com/sipus-cms)

**Siemens offers a comprehensive portfolio of services related to products, systems, and applications – across the entire lifecycle of machines and plants, from planning to modernization.**



## Teamcenter PLM software for product development

# Collaboration platform for better products

The Teamcenter product lifecycle management (PLM) software, for company-wide deployment, promotes both product and process innovation. A comprehensive portfolio of solutions provides everyone involved in the development and manufacture of products with the information they need to make collective, intelligent decisions in their assignments at all times.



**W**ith Teamcenter, which uses a single information source for product data and processes, all work processes can be organized uniformly and efficiently, from system engineering and requirements management to bill of materials and supplier management to maintenance. Teams and suppliers spread across the globe can work together on a common knowledge base and with current product data, instantly and at any time, and in every phase of the product lifecycle they can make informed decisions quickly and with a great degree of certainty – for better products.

### Access to PLM information – always and anywhere

Product developers need to take large amounts of information and data into account and make the right decisions, often based on a variety of sources. The Active Workspace user interface for Teamcenter allows users to find data anywhere in the company's PLM landscape, so they can quickly and easily obtain the information required for the task at hand. Products can be easily visualized in context and in high

resolution, allowing 3-D product data to be examined in detail. Product information can be compared and graphical reports can be prepared. The intuitive, Web-based Active Workspace can also help users quickly find the right people who can help to make the right decision.

### Production planning with Easy Plan

Easy Plan is a Web-based application for production planning that makes use of existing product and manufacturing data. It combines site-specific operations and resources with products so that users can allow for greater flexibility and complexity. Easy Plan provides line balancing, time assessment, station-level walkpath estimates, and electronic work instruction capabilities. Easy Plan helps companies improve their operational efficiency, reduce errors, and maximize productivity. The application is based on the Teamcenter PLM software and can also be used on mobile devices. ■

[siemens.com/plm](http://siemens.com/plm)

Industry Software from Siemens enables companies to produce more efficiently in the digitalized value chain.

### PLM software NX 10

## Greater productivity with touch mode



The NX software solution, with integrated CAD, CAE, and CAM for product development and manufacturing, helps users produce higher-quality products faster and more efficiently. Thanks to the new, optional touch mode in the user interface, NX 10 provides significantly greater versatility and ease of use. The touch mode enables faster and more intuitive interaction with the software, making its operation convenient. NX can be used on tablets with the Microsoft Windows operating system, making it possible to use NX capabilities anywhere.

Using a stylus or their fingers, users now have access to all the design features of NX no matter where they are – whether they are in the production area, on the road, or in consultations. It has never been easier to access information from anywhere, which also increases productivity. ■

[siemens.com/plm](http://siemens.com/plm)

### New features

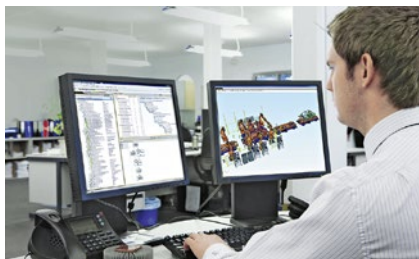
- Optional touch mode for greater access to all the design features of NX
- Greater ease of use, regardless of location
- Greater productivity thanks to easier access

### Tecnomatix 12

## Digital manufacturing – better products

The Tecnomatix PLM software is the leading solution for digital manufacturing. The current version, Tecnomatix 12, covers the entire production cycle – from the concept phase to detail planning to the start of production. Production inefficiencies are eliminated, lead times are reduced, and quality is improved. Knowledge management functions make it possible to capture and make further use of know-how. Planning processes can be standardized by defining workflows. Specific solutions support the planning workflows in various industries such as the automotive and aerospace industries, mechanical engineering, and high-tech electronics. Tecnomatix provides solutions for process planning, simulation, and production in digital plants. The digital manufacturing solutions are built on the Teamcenter PLM solution. ■

[siemens.com/plm](http://siemens.com/plm)



### New features

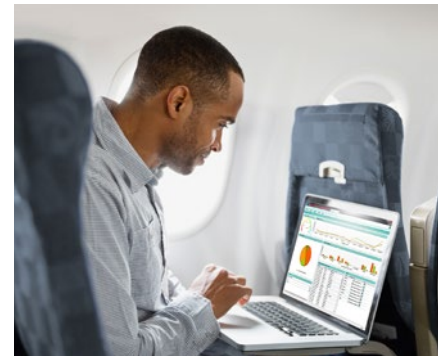
- Quicker access to product information and assemblies
- Verification of methods and resources in the planning phase
- More reliable responses to installation, operation, and quality issues

### Comos Mobile Solutions 1.1

## Work on a global network

Two new features of the Comos Mobile Solutions product family help make project and plant data available at any time, regardless of location. In Version 1.1, the new dashboards and task management improve globally networked activities. All important information is displayed clearly. Important data and documents can be compiled using pre-configured queries or favorite links for each dashboard on the Web. The new task manager shows the user what needs to be done and when. It has access to all relevant documents so it can easily provide feedback.

The new features of the product family are particularly well suited to mobile information management in globally



distributed plant projects. Customized solutions save time and money and improve collaboration among various departments and disciplines. ■

[siemens.com/comos](http://siemens.com/comos)

### New features

- Easy use and evaluation of engineering and operational data
- Perfectly coordinated work processes through simple task management
- Direct access to all project-related documents

## Simit Simulation Framework V8.1

### Even easier and more flexible simulation projects



Siemens has upgraded its virtual commissioning and operator training systems offering with the new Version 8.1. The Simit product line has also been complemented by the Simit Virtual Controller

software, which emulates Simatic S7-300, S7-400, and S7-410 controllers. The new interface to the Simit Virtual Controller V3.0 can be homogeneously integrated into existing interfaces.

The Simit Simulation Framework and Virtual Controller are seamlessly integrated so they can be synchronized in real time and in virtual time (for faster or slower running of simulations).

The Virtual Controller software enables an unlimited number of emulated controllers, which can be distributed across several computers, and thereby offers the required flexibility and scalability, especially in large projects or training systems. ■

[siemens.com/simit](http://siemens.com/simit)

### New features

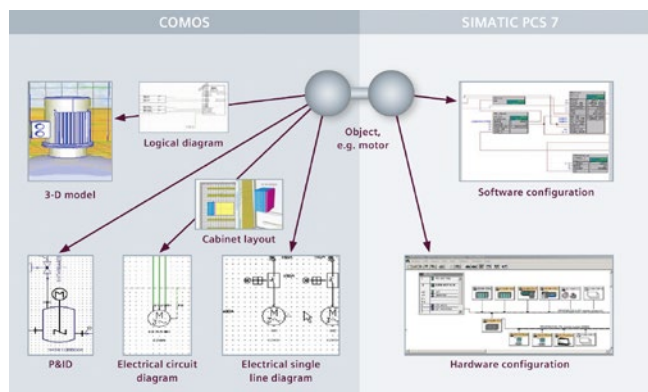
- Emulation of S7-300, S7-400, and S7-410 controllers
- Flexible, scalable simulation and emulation environment
- Synchronized simulation and emulation running, in real time or in virtual time (faster/slower)
- Greater configuration ease and efficiency when connecting, routing, and scaling signals in simulation models

## Integrated Engineering with Simatic PCS 7

### Integration of sequential controls

It is becoming increasingly important to parallelize work processes efficiently in the face of increasing global competitive pressures in industry. Doing so also helps reduce the cost and time involved. Integrated Engineering is the optimized interaction of plant design, process control, and the production area. New developments in integration can also be seen when it comes to implementing the requirements of discontinuous production plants. Planning, documentation, and engineering, even of complex sequential function charts (SFCs), can be consistently realized and derived in accordance with the ISA-88 standard. ■

[siemens.com/integrated-engineering](http://siemens.com/integrated-engineering)



### New features

- Efficient planning
- Efficient SFC engineering
- Greater engineering flexibility
- Fewer function tests

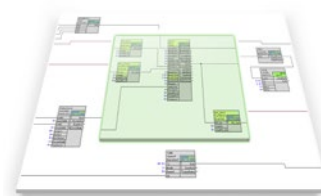
## Simatic PCS 7 type concept

### More efficient software engineering

The new type concept offers plant operators and constructors the base for even more efficient engineering, greater standardization, and enhanced security. Part of this concept involves bringing the plant planning system and the automation and process control systems closer together and it is based on standardization and reduction of interfaces instead of proprietary system solutions.

Thanks to the new engineering approach, all plant engineers, operators, process and automation engineers involved speak the same language and can exchange information on a common basis. This saves time, simplifies engineering, and reduces the associated costs. ■

[siemens.com/pcs7-engineering-system](http://siemens.com/pcs7-engineering-system)



### New features

- Cross-plant comparison of functions
- Optional features
- Optional functionalities
- Greater standardization
- Less testing

SIEMENS



# SIRIUS ACT – Performance in Action

Fast assembly thanks to new fixing concept

Installation has never been easier. With 100% twist prevention integrated into the holders, SIRIUS ACT can be installed in groove-free milled holes, saving you significant installation time.

The innovative snap-on concept makes the task of installing a unit so effortless that it can be done with one hand.

In addition, visible installation markers and indicators on components further reduce the risk of incorrect installation.

SIRIUS ACT push buttons and signaling devices – convincing in design, performance, ruggedness and handling. Enabling you to get things going.

[siemens.com/sirius-act](https://www.siemens.com/sirius-act)