



advance product news

April 2012

SIEMENS

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Excellent and
Consistent in
Widescreen Format

Drive Technology
Link for Consistent
Drive Solutions

Industrial Switching Technology
Simocode pro
Goes Ethernet

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Dear Readers:

In addition to the prevailing issues of energy efficiency and sustainability, consistency and flexibility are central requirements for the products and systems of today's automation and drive technology. See for yourself in this issue how all the innovations Siemens is presenting at this year's Hannover Messe further enable the comprehensive Totally Integrated Automation portfolio to fulfill these requirements.

For example, the new Simogear geared motors are perfectly matched to each other with their optimized range of products. The new Simatic HMI widescreen devices, the UHF RFID readers that can now also be used in industrial production even under difficult radio-transmission conditions, and the new options given to users of the Simocode pro motor management system through communication via Profinet are also characterized by continuity and flexibility.

We hope you enjoy reading this information-packed issue.

The Editors

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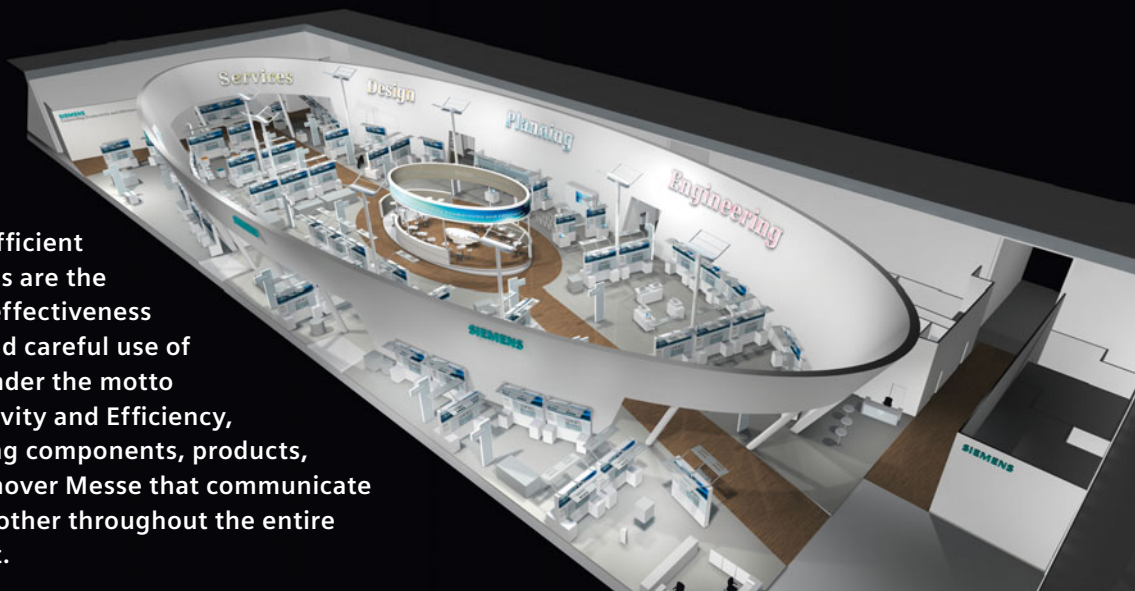
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+ Integrated solutions at Hannover Messe 2012

Focus on Cost-Effectiveness and Sustainability

Advanced, energy-efficient devices and solutions are the key to greater cost-effectiveness and a sustainable and careful use of the environment. Under the motto **Connecting Productivity and Efficiency**, Siemens is presenting components, products, and systems at Hannover Messe that communicate perfectly with each other throughout the entire lifecycle of the plant.



To improve the productivity and efficiency of a plant in a lasting manner, it is necessary to look not only at the individual stages of production but also at the entire value-added chain. With its comprehensive offering of automation technology, industrial switching technology, drive technology, and industrial software, Siemens provides products and solutions for the entire value-added chain – from product design and product planning and development to production and maintenance – that are matched to each other. At the Siemens booth in hall 9, visitors can see the optimization potential of their plants for themselves.

Save and manage energy

At Hannover Messe, Siemens is presenting a number of products that increase efficiency in production. One highlight in the area of drives is the new Simogear geared motors that are an integral part of the drivetrain. They are available in the high-energy-efficiency IE2 and IE3 classes, offer higher torque than comparable products of the same size from the competition, and are as economical as a standard modular system even when configured individually. In addition, Siemens also

presents a new bucket elevator drive that combines components from the geared motor range Flender SIG and Simogear to an integrated drive unit. Thanks to its improved gear geometry and casing modification, it enables maximum energy efficiency and is optimally designed for the extreme conditions in conveyor technology. The flexible inverters of the Sinamics range also contribute to an energy-efficient operation. Reliable energy management also plays an important role in efficient production. With the new versions of B.Data and Simatic powerrate, the software is now even more versatile and convenient.

Totally Integrated Automation for higher productivity

In addition to energy efficiency, cost-effectiveness and high productivity are indispensable for every factory – from the control system to operating and monitoring, and from communication to the switching technology. For example, the S7-1200 has been expanded in the upper power range with the Simatic S7-1215C CPU. For distributed monitoring and control close to the machine in widescreen format, the new Simatic IFP Flat Panel and ITC Industrial

Panel as well as the Comfort Panel are available as convenient HMI devices. The Simocode pro motor management system, which has been expanded by a basic device with a Profinet interface, presents new functions for diagnostics, control, and protection of the motors. This way, the availability and productivity of the entire plant can be increased. Thanks to the Profienergy function integrated into the new basic device for Profinet, Simocode pro also provides a valuable contribution to cost optimization in the plant.

Under the new umbrella of Industrial Remote Communication, the Scalance M UMTS routers make secure control and monitoring of spread-out plants possible. The extended portfolio of industrial communication offers new application opportunities with the acquisition of the Canadian supplier RuggedCom, for example in utilities and transportation, in particular in rough environmental conditions.

In the field of industrial identification Siemens has been offering RFID systems for a long time. The UHF RFID readers have now been optimized further – for reliable operation in demanding radio applications.

www.siemens.com/hannovermesse

+ Simatic HMI and IPC portfolios

Excellent and Consistent in Widescreen Format

Uniform fronts in the innovative widescreen format are now available for every Siemens HMI device – whether comfort panel, panel PC, industrial monitor, or thin client.



HMI and IPC devices from Siemens are now also available in a uniform industrial design with sturdy widescreen fronts. Whether they are positioned right at the machine or far removed, optimally suited devices with an attractive front design and large visualization areas are available for every application, even for use in potentially explosive areas if required (certification for shipbuilding is in preparation). The comfort panels for controller-based automation and Nano IPCs for PC-based applications have now been complemented by sturdy industrial monitors and thin clients.

The high-quality aluminum die-cast fronts of all the panels are equipped with high-contrast, high-definition displays in widescreen format and are offered as indicating devices only or as operator/mon-

itoring devices with touch and key fronts in dimensions of 4" up to 22". In addition, they can be mounted flexibly, for example, on a supporting foot, on a bracket, or in an operation console or control cabinet. To make optimal use of the space in the plant or for implementation in special machine constructions, some touch devices can also be used vertically.

Uniform design of machines and plants

The consistent widescreen fronts enable the uniform design of machines and plants, regardless whether automation is controller based or PC based. In the case of controller-based applications with machine-related HMI in high-end functionality, the Simatic HMI Comfort Panels are

the top choice. They offer great convenience during commissioning, operation, and diagnostics. For PC-based automation, the performance-optimized Simatic IPC277D Nano Panels are available for easy control, visualization, and communication tasks. The two new device series offer flexibility in their application: Simatic IFP Industrial Flat Panels as sturdy industrial monitors for connecting to industrial PCs at distances of up to 30 m and Simatic ITC Industrial Thin Clients for distributed solutions involving long distances and many stations.

All HMI devices can be consistently configured via the efficient, intuitive TIA Portal in order to increase productivity and competitiveness.

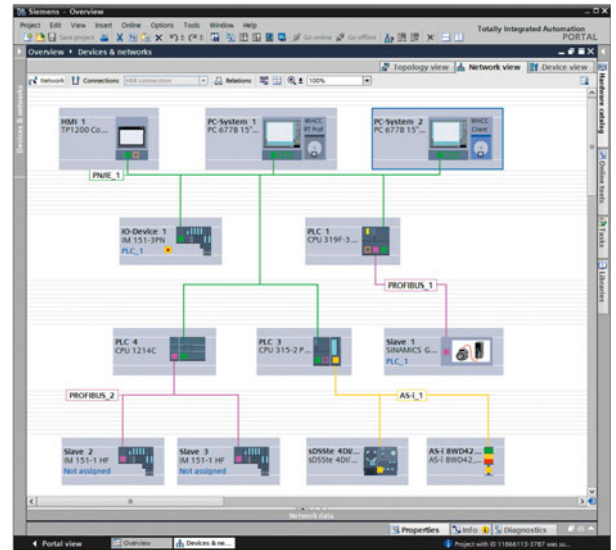
www.siemens.com/simatic-hmi-widescreen

+ TIA Portal V11 SP2

Consistent Engineering – from Controllers to Drives

The engineering software Simatic Step 7 V11 SP2 offers users improved functions and consistent usability in TIA Portal: 64-bit support for Windows 7, the third programming language Structured Control Language (SCL) as well as download options during operation (DL in run) for the Simatic S7-1200 controller. Thanks to the engineering possibility of WinAC in TIA Portal, PC-based is now also fully integrated in the engineering framework. Modular controllers and WinAC can therefore be consistently configured and programmed in one environment. The SP2 version also enables the seamless integration of safety into TIA Portal. With Simatic Step 7 Safety Advanced V11 all configuration and programming tools required for creating safety-related programs are integrated in the Step 7 user interface and use a shared project structure. All the advantages of TIA Portal can be used for fail-safe automation. A further highlight in TIA Portal SP2 is the tool Sinamics Startdrive, enabling users to easily parameterize and commission Sinamics G120 frequency inverters. Intuitive functions and a clear presentation of the parameters from different angles enable fast integration of the drives in the automation system as well as easy and efficient parameterization.

www.siemens.com/tia-portal



New features:

- + New functions of Simatic Step / V11 SP2 (64-bit support, SCL, DL in Run)
- + Integration of WinAC in the TIA Portal
- + Simatic Step 7 Safety Advanced V11 for creating safety oriented programs
- + Sinamics Startdrive for the easy parameterization of Sinamics G120 frequency inverters

+ Simatic S7-300 CPUs FW V3.3

Top Choice for Scalable Automation

Both the modular and the compact Simatic S7 CPUs cover a large range of automation tasks, from the simple to the sophisticated. In the new firmware, the Simatic S7-300 CPUs have been expanded with intellectual property protection, improved communication, and monitoring functions.

With firmware version 3.3, the significantly improved standard CPUs, the compact CPUs, and the fail-safe CPUs receive S7-block privacy and with it reliable module encryption as protection against manipulation and copying. The simultaneous online status of two modules enables improved diagnostics options for optimized commissioning and maintenance in instruction lists, ladder diagrams, or function block diagrams.



Moreover, all CPUs from CPU 315 on have significantly improved communication performance in time-slice technology that can be configured in Step 7 HW Config, which has a minimal effect on the cycle. To be able to use the new features, the user needs Step 7 V5.5 + SP1 or higher, or Step 7 V5.2 + SP1 or higher with HSP 218.

Thanks to the Profinet interface of some CPUs – realized as an integrated two-port switch for the simple and affordable implementation of line structures and I/O concepts – the most up-to-date Profinet features are supported, for example, shared device, intelligent CPU as I/O device (i-Device), medium redundancy protocol (MRP), and integrated web server with user-defined websites.

www.siemens.com/simatic-s7-300

New features:

- + Improved intellectual property protection with module encryption
- + Simultaneous online status of two modules
- + Improved communication performance, state-of-the-art Profinet functions
- + Ten times faster with up to twice the memory



+ Simatic S7-1200/CPU 1215C

Higher Performance through Expanded User Memory

The new Simatic S7-1215C CPU completes the Simatic S7-1200 product portfolio. The controller stands out with its larger integrated user memory (100 KB), as well as with its second Profinet interface. The CPU furthermore has analog outputs as well as fast outputs for actuating up to four stepper motors. A powerful automation system that is geared to the future is the result, based on the existing portfolio of I/O modules and the various interface units, together with an overall improved performance.

www.siemens.com/simatic-s7-1200

New features:

- + Two Profinet ports
- + 100 KB user memory
- + 85 ns bit performance
- + 14 DI / 10 DO integrated
- + 2 AI / 2 AO integrated
- + 4 PTOs to actuate stepper motors

+ Simatic Field PG M3

Equipped for the Future

With the new March 2012 software release, the Simatic Field PG M3 is now also available as a future-proof model with the Windows 7 Ultimate operating system in the 64-bit version. The following updated engineering products for control and HMI are preinstalled and ready to run:

- Step 7 Professional V11 SP2
- WinCC Advanced V11 SP2
- Step 7 Professional 2010 SR2
- WinCC flexible Advanced 2008 SP3
- Step 7-Micro / Win V4.0 SP9 (enclosed on digital data medium)
- Step 5 V7.23 HF2 (enclosed on digital data medium)

The 64-bit Windows 7 operating system version of the Field PG models Standard and Premium are supplied as standard with a 6 or 8 GB memory module. The upgrade of existing devices to a maximum of 8 GB can be achieved by means of a new 4 GB memory module. The fast Intel solid-state drive (SSD) has over 300 GB memory storage space and considerably speeds up the boot process. It also cuts the program execution times decisively.

www.siemens.com/simatic-pg



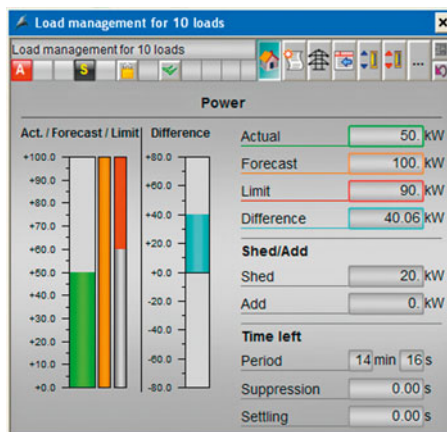
New features:

- + Windows 7 64-bit operating system
- + Field PG Premium model with 8 GB working storage
- + Field PG Premium model optionally with 300 GB SSD – also available as accessory kit
- + Boot option available for order: second operating system especially for Step 5

+ Simatic B.Data V5.3 / Simatic powerrate V4.0 SP1

Highest Transparency for Energy Consumption and Costs

The new version of Simatic B.Data, V5.3 for Windows 7 (64-bit), now also offers an energy management dashboard. This enables the transparent and clear tabular and graphical presentation of energy consumption and costs as well as important key values. Measures for improving energy efficiency can now be managed directly in B.Data. In addition, reports can be configured more easily, and the option to create an overview report of all measured values exists.



Users also have the option to receive an alert in the event of certain deviations of key values. This makes faster response times possible and reduces energy and production costs.

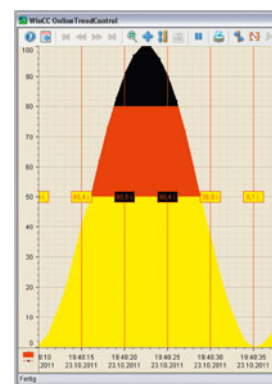
Simatic powerrate in version 4.0 SP1 offers the new APL (Advanced Process Library) design, thus integrating seamlessly into the user interface of the Simatic PCS 7 control

system. The approval for WinCC Asia and the support of Chinese (simplified) as a user language expand the application range in the Asian market. Through the support for Windows 7 (64-bit) architectures and Microsoft Excel 2010, users can take advantage of all the functions of Microsoft Excel 2010 for reports created with Simatic powerrate.

www.siemens.com/wincc

New features:

- + Energy management dashboard for the transparent display of energy consumption and costs
- + Shift calendar to include different production shifts in energy planning
- + Localization support – regional public holidays can be taken into account for reporting and evaluation of energy planning
- + Planning and tracking of energy efficiency measures



+ Simatic WinCC 7.0 SP3

Improved Monitoring and Archiving

The new version of the Simatic WinCC 7.0 SP3 SCADA system has been innovated compared with the previous WinCC 7.0 SP2 version. It now supports the 64-bit operating systems Windows Server 2008 R2 and Windows 7 64-bit (Professional, Enterprise, and Ultimate), for example. In addition, there are a number of other helpful functions for the user such as an improved archiving and more convenient data access.

www.siemens.com/wincc

New features:

- + Expansion of online trend controls by the stamping of the online or archive values in the online trend control
- + Improved and more powerful archiving through data compression with swinging-door algorithm
- + WinCC OPC UA client for data access to any OPC UA server according to the OPC Unified Architecture Specification, part 8: Data Access Release 1.01
- + Remote server and remote operation VNC
- + Supported web browser: Microsoft Internet Explorer (V9.0)

+ Simatic IFP Industrial Flat Panel

Sturdy Monitors in Brilliant Widescreen Design

The Simatic IFP industrial flat panels are equipped with die-cast aluminum fronts in widescreen format for 24-hour continuous use at ambient temperatures between +5°C and +45°C. They are optimized for sturdy and affordable distributed HMI applications with quick response times (e.g., jog mode, curves). They are available as indicating devices only or with touchscreens in dimensions of 15", 19", and 22", and as a 15" key version with a touchscreen, function keys, a mobile keypad, and a USB interface at the front. They are connected via DVI-D or DisplayPort interface and, as an extended version, can be set up as far as 30 m from the industrial PC. The devices are ATEX certified (certification for shipbuilding is in preparation).

www.siemens.com/simatic-flat-panel

New features:

- + Vertical mounting for all touchscreen devices
- + DisplayPort interface for innovative and cost-effective cable installation



New features:

- + Safe operation through high-contrast widescreen displays with high definition and readability up to 170° from all directions
- + Energy savings thanks to 100 percent continuously dimmable LED background lighting
- + Consistent widescreen fronts for flat panel, thin client, comfort panel, or panel PC, allowing for a uniform machine/plant design

+ Simatic ITC Industrial Thin Clients

High Flexibility and User Friendliness

The Simatic ITC industrial thin clients are powerful operator panels with widescreen touch displays in dimensions of 12", 15", 19", and 22". They are particularly user-friendly when realizing distributed HMI solutions with client/server architecture and can be used flexibly – from machine-related operating and monitoring connections to control systems (SCADA) and numeric controls (Sinumerik).

Since Simatic ITCs do not have wearing parts such as fans or hard disks and are equipped with die-cast aluminum fronts, they are especially sturdy and maintenance-free. The use of Industrial Ethernet allows the devices to be set up at a virtually unlimited distance from the server system.

A gigabit LAN interface, an integrated web browser, and numerous supported protocols – for example, RDP, Sm@rtServer, VNC, and Sinumerik – offer high flexibility and fast communication with other systems.

www.siemens.com/simatic-thin-client

New features:

- + High degree of user-friendliness thanks to a ready-to-run, quick-to-configure system and central device management for several thin clients (RCC)
- + Multisession for parallel connection to several servers with quick switching
- + High plant availability through automatic recovery of the connection and redundant server connections

+ Simatic HMI Comfort Panel KP1500, TP1500, TP1900, TP2200

Consistent High-End Functionality

Four new devices complete the Simatic HMI Comfort Panel product line: the KP1500 Comfort key-controlled device and the TP1500, TP1900, and TP2200 Comfort touch devices. This gives users a choice of display type with consistent functionality and a quantum leap in performance.

www.siemens.com/simatic-comfort-panels



New features:

- + Consistent high-end functionality for screen sizes between 4" and 22"
- + Lower hardware costs thanks to the integrated two-port Profinet switch
- + Third Profinet interface for screens 15" and larger
- + Innovative service functions
- + Supports Profienergy protocol
- + Awarded with the iF product design award 2012

+ Simatic ET 200SP

Simple, Compact, Powerful

The distributed I/O system of the new Simatic ET 200SP generation is characterized by simple application, compact design, and strong performance. The Simatic ET 200SP is easy to use due to its variable and scalable station structure. The modules are easy to connect, saving time dur-



ing installation. In addition, the Simatic ET 200SP offers inscription models that give the most important information on the module, wiring, and channels.

The compact design of the Simatic ET 200SP ensures maximum economy within the control cabinet: 64 modules with 64×16 signals fit in only 1 m. In addition, the small size ensures compliance with the standardized bend radius even in switch boxes with 80 mm depth. The strong performance facilitates communication with Profinet, guaranteeing high velocity and a high-volume data rate.

www.siemens.com/et200

New features:

- + Improved arrangement of the slots on the terminal box and push-in technology for easy wiring without a tool
- + Space-saving in the station through integrated power module
- + Ability to replace modules and terminal boxes during operation without station downtime
- + Highest precision and rapid data transmission via the isochronous mode of the rear plate bus with Profinet
- + Integration of Profienergy for maximum energy efficiency



Scan the QR code with the QR code reader of your mobile phone.

+ Sitop PSE202U

Compact Redundancy Modules

Two new redundancy modules with only 30 mm mounting width ensure reliable 24 V power supply for small outputs. The redundancy module 24 V/10 A uncouples two power supply units with up to 5 A output current. To protect currents of up to 10 A, one redundancy module each is connected in series to a power supply unit.

The version 24 V/NEC Class 2 not only uncouples the power supply units, so that a defective power supply unit does not affect an intact one, but also limits the output power to 100 VA. Combined with the UL-certified Sitop power supply units, the NEC Class 2 standard is thus met, for example, for use in the automotive, semiconductor, and food processing industries.

www.siemens.com/sitop



New features:

- + Version for uncoupling Sitop power supply units of the same type of up to 10 A
- + NEC Class 2 versions for limiting the output power to 100 VA
- + CE and cULus certifications



+ Sitop PSE200U

Channel-Specific Signaling

The Sitop PSE200U selectivity module is the perfect supplement for all 24 V power supplies. It reliably detects overloads and short circuits in a branch and indicates them via an LED. Previously the

alert was sent to the control system via a common signaling contact. With the two new selectivity modules, channel-specific evaluation is now possible. For this, the signal output must be connected with only one standard digital input of the control system, as before. The channel that has been turned off is detected via a pulse-pause protocol and evaluated by the control system. A Simatic S7 function block is available online and free of charge for easy integration into the PLC. Channel-specific signaling is available for selectivity modules with 4×3 A and 4×10 A outputs.

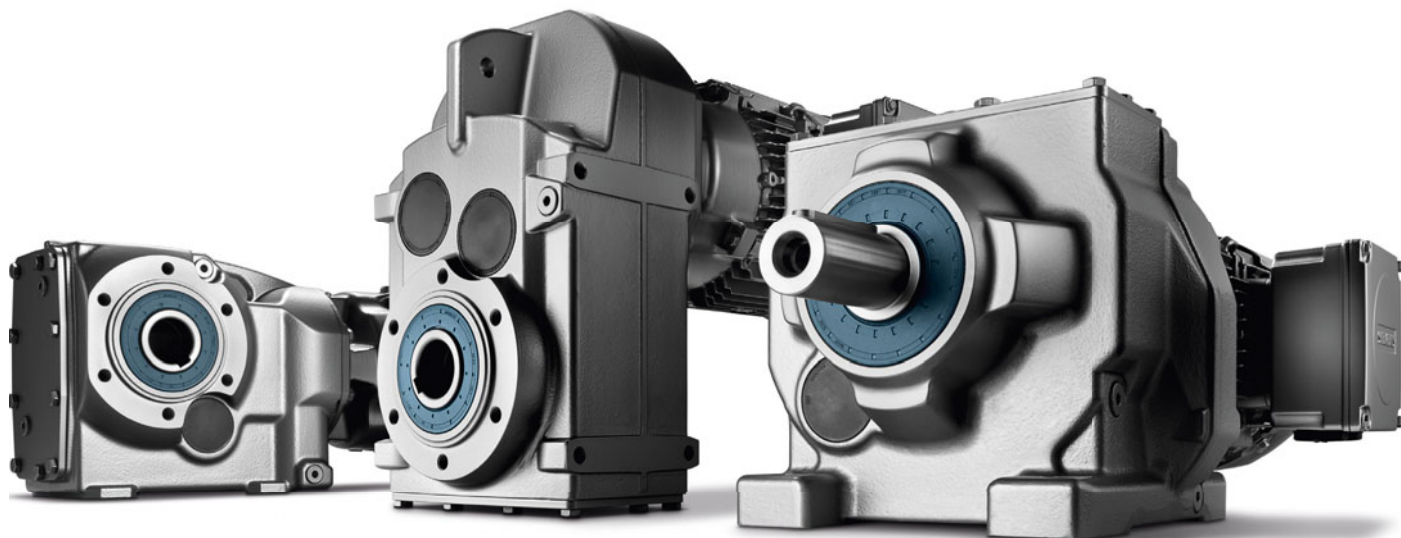
www.siemens.com/sitop

New features:

- + Channel-specific signaling of the turned-off 24 V branch via one signal channel
- + Integration via Simatic S7 function block
- + Selectivity modules with 4×3 A and 4×10 A outputs

+ New Simogear geared motors series

Link for Consistent Drive Solutions



To be efficient, geared motors must be optimally matched to one another – from planning to configuration and implementation to the control system of the entire drivetrain. For this reason, Siemens has developed the new Simogear geared motors series, which offers significant advantages in terms of type variety, compactness, and power density.

In pursuit of complete continuity, Siemens has coordinated all areas of drive technology, from planning to realization to service, thus systematically optimizing the drivetrain. One important aspect in this process is a comprehensive, globally available portfolio. The new Simogear geared motor series, which replaces the well-known Motox geared motors, is an integral part of the drivetrain. In a wide variety of industries such as automotive, logistics, food and beverage, and so on, especially the conveyor technology benefits if planning, design, control, and drive

form one perfectly functioning system. This not only impacts the economic efficiency of a solution but also has a positive influence on operating costs, availability, and service.

Advantage through standardization

A number of constructive improvements, together with the standardization of components, have resulted in a considerably greater range of Simogear products on offer compared with the previous Motox geared motors. In addition to the high

cost-effectiveness, they offer fine gradations and reduction ratios, greatly benefiting users when designing their drive solutions. Thanks to the use of standard mounting dimensions, it has become easier to change suppliers to modernize or even redesign entire drive solutions.

Innovations for higher efficiency

Simogear geared motors also offer a multitude of technical innovations, resulting in higher energy efficiency. For example, they have an especially large gear ratio (i)

already on the first level, leading to a total gear ratio (i_{total}) between 3.5 and 60 in a two-level straight bevel gear pair. The use of a plug-in pinion, which can be dimensioned much smaller than customary push-on pinions, allows the elimination of one gear level, increasing the efficiency. Another highlight is the integrated A-end shield on the motor in place of an adapter plate plus end shield. This makes the geared motors shorter and eliminates one intersection or seal point – for greater compactness and ease of servicing. In addition, Simogear can be equipped with motors of both the high-energy-efficiency class IE2 and the even higher class IE3 without having to change the size of the motor. If the user wants to change into the higher-efficiency class later, the entire gear ratio range is available.

Modular system ensures flexibility

On the motor side, Simogear is designed with a modular design using the “Modulog” principle, patented by Siemens, making it possible for users to configure the geared motors according to their wishes. The basis of the modular system is a two-pole, four-pole, or six-pole basic motor, designed for international network conditions, with outputs between 0.09 and 15 kW that can be supplemented with an additional shaft system, which in turn can be configured as desired. This allows the configuration of the geared motor desired by the user to be put together conveniently and with a short delivery time. Small sizes are made of aluminum to make them lighter.

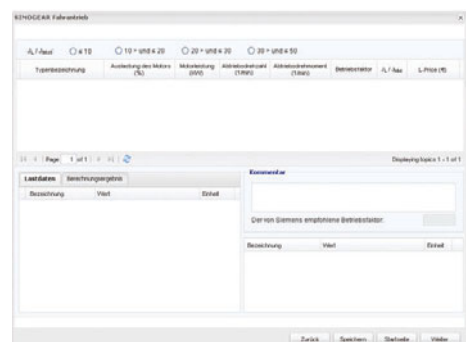
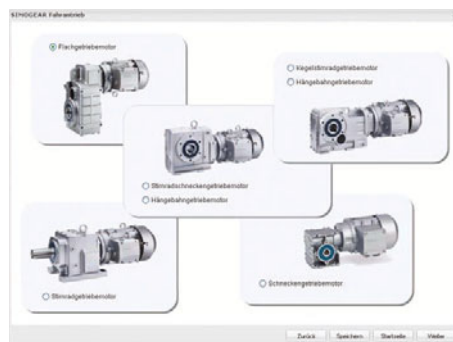
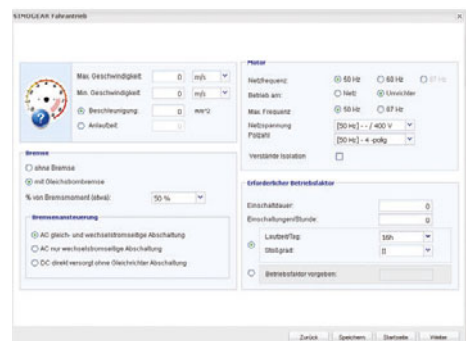
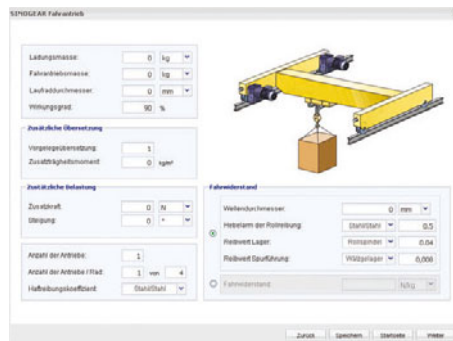
Complementary software

The Simogear hardware is completed by a number of software tools. For the config-

uration of the new geared motors, the Simogear configurator will be made available, with which the appropriate geared motor solutions can be precisely determined using required application data such as gear ratio, torque, output, and so on. The program then supplies important information such as list price, time of delivery, order number, and dimensional

drawings in 2-D and 3-D for all standard CAD programs. The Archimedes tool is an integral part of the Simogear configurator for the configuration of drive solutions. With it, applications such as travel drives, hoist drives, roller conveyors, and so on can be easily calculated in just a few steps.

www.siemens.com/simogear





+ Sinamics S120 CU310-2

Control Unit for Independent Axle Drives

The innovated CU310-2 control units come with a greater number of digital onboard I/Os and have now also been expanded with an analog input. Optionally, some of the digital I/Os can also be used as fail-safe I/Os. With the extended scope of I/Os, drive-related functions may now be implemented without the use of additional components, making it more economical at the same time. This applies especially to the use of integrated safety functions. With software version 4.5, the modules also have the new Safely Limited Position (SLP) safety function.

www.siemens.com/sinamics-s120

New features:

- + Extended scope of onboard I/Os
- + Drive-related functions even easier to implement
- + Now also available with the new SLP safety function



+ Sinamics G120D

Positioning Capability and Energy Recovery Combined

The Sinamics G120D drive is especially tailored to demanding conveyance applications in industrial environments that require a communication-capable distributed drive. It is therefore perfectly suited for high-performance applications, for example, in automotive production and in baggage handling systems, as well as in many other industrial sectors.

The second generation of the Sinamics G120D completes the IP65 product line and is especially noteworthy for its integrated positioning capability in both incremental and absolute path measuring systems. In addition, extended safety functions are available. However, the Sinamics G120D also scores with regard to energy efficiency: the modular inverter is Profienergy-compatible and has integrated energy-saving modes and a standard energy recovery capability.

www.siemens.com/sinamics-g120d

New features:

- + Integrated positioning capability
- + Extended safety functions and safe I/Os on board
- + Extension of digital I/Os to include analog inputs
- + Performance enhancement through improved SLVC/VC control

+ Sinamics G120P

More Flexibility with New Hardware

The Sinamics G120P frequency inverter is a cost-effective, energy-efficient, and easy-to-operate drive for pumps, fans, and compressors with a wide range of functions. Thanks to its extension with the new PM230 IP20 power module, this inverter can also be used for installation in control cabinets in confined spaces. The new power module is based on a new hardware platform that enables a higher power density as well as innovative cooling concepts.

www.siemens.com/sinamics-g120p

New features:

- + IP20 standard degree of protection for installation in control cabinets
- + More flexibility and higher performance due to new hardware platform



+ Sinamics G120C

Profinet for Efficiency and Performance

Siemens supplements the compact Sinamics G120C frequency inverter with the Profinet communication version. With this model, there is now another version available in addition to Profibus, USS / Modbus RTU, and CAN that is characterized in particular by its high efficiency and performance. This makes fast data exchange for high-performance motion-control applications possible. Moreover, nonreactive standard Industrial Ethernet communication is possible in parallel with deterministic Profinet communication. The Sinamics G120C has been designed for worldwide use in industrial environments. It is suited for operation in pumps, compressors, fans, mixers, and extruders, as well as conveyor belts and simple handling machines. In addition to machine manufacturers, the target market also includes distributors that do not assemble inverters from modules but prefer purchasing them already completed.



www.siemens.com/sinamics-g120c

New features:

- + Profinet communication version for high efficiency and performance
- + High-speed data transfer for high-performance motion-control application

+ Sinamics G120 modular frequency inverter

Higher Power Density and Profinet Capability

Two new power modules (PM240-2 FSA and PM230 IP20) and two new Profinet control units expand the modular system of the Sinamics G120 frequency inverter series. The PM240-2 FSA, which is based on a new hardware platform, achieves a power density of up to 3 kW LO (Low Overload) in the framesize A (FSA) instead of the previous 1.5 kW LO. In addition, the push-through technology enables innovative cooling concepts, so that even applications with particularly high requirements regarding heat dissipation in the control cabinet can be realized. From this generation on, a power module with an integrated filter in a compact design will also be available. In addition to the previously available Profibus DP and RS485/USS/Modbus RTU interfaces, the CU240E-2 control unit series is also available with Profinet, the open Industrial Ethernet standard.



New features:

- + Two new power modules: M240-2 FSA and 230 IP20
- + Push-through technology for innovative cooling concepts
- + CU240E-2 control unit available as a Profinet version

www.siemens.com/sinamics-g120



+ Loher Chemstar motors

Explosion Protected and Energy Efficient

Loher Chemstar motors with the Ex e ignition protection type offer increased safety for the higher requirements in chemical and petrochemical industries (explosion hazard, aggressive atmosphere, and extreme temperatures). In addition to efficiency class IE2, a large part of the portfolio is now also available in the IE3 premium efficiency class. This not only avoids unacceptably high temperatures in the motors, but at the same time, an increase in efficiency of between 1 and 10 percent is also achieved in comparison with standard motors. This results in an enormous energy-saving potential and lower operating costs – even for explosion-protected areas in industry. The high efficiency factor is not yet law: only in 2017 will all motors with a rated output of 0.75 to 375 kW need to meet the requirements of efficiency class IE3, or comply with efficiency class IE2 if they are equipped with a speed-controlled drive.

The Dynavert T frequency inverter series is designed especially for operation with explosion-protected motors. By equipping the inverter with optional ATEX-certified motor temperature monitoring, operation is possible without the otherwise customary external line contactor. The evaluation is carried out directly via the PTC temperature sensor mounted in the motor coil by sole protection.

New features:

- + Up to 10 percent (0.75 kW; 4 pol.) higher efficiency than standard motors
- + Avoidance of unacceptably high temperatures everywhere in the motor
- + Shaft height up to 450 mm and a power spectrum of 0.12 to 315 kW

www.loher.com

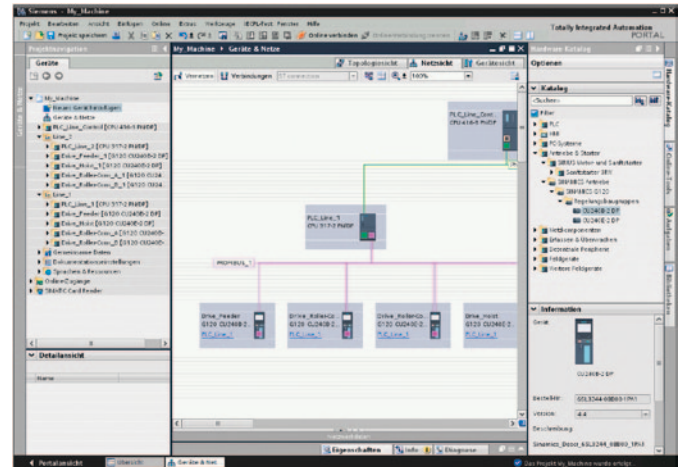
+ Sinamics Startdrive

Easy Configuration of Drives

With Startdrive, Siemens offers easy-to-use engineering software for configuring and commissioning Sinamics G120 drives. The software can be seamlessly integrated into TIA Portal, enabling not only the SPS programming and configuration of HMI devices in TIA Portal, using a uniform look and feel, but also the parameterization and commissioning of Sinamics G120.

The integration of the drive into an automation system with PLC and HMI devices is performed graphically using drag and drop. The communication addresses are automatically suggested by the system. The required telegram settings for the cyclical data exchange between control system and drive are also preset for each drive. The Sinamics drive can then be viewed in the project navigator of TIA Portal, and configuration, parameterization, commissioning, and online diagnostics are possible. The corresponding editors can be started directly from the project navigator. In addition, there are various options for setting the drive parameters: setting the drive parameters guided by an assistant, setting the parameters with graphical support in the functions view, and – for experts – direct input of the parameters in the list view. This parameter list has been structured by functions for faster navigation. Using filters according to function and user, the display of long lists is avoided. Only the parameters required for the solution of the specific task are shown.

All in all, training time is reduced to a minimum due to the provision of central services in TIA Portal, the synchroniza-

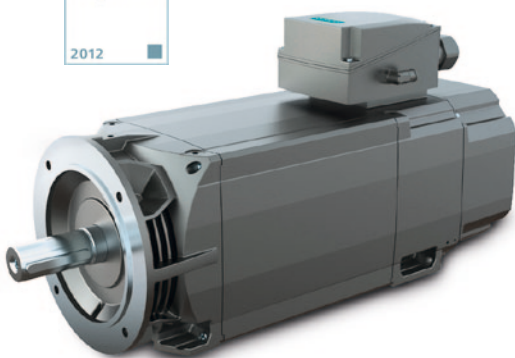


New features:

- + Integration of Sinamics G120 drives into an automation topology through simple drag and drop
- + Clear representation of the drive-specific engineering functions in the project navigator
- + Three alternatives for setting the drive parameters: guided by an assistant, with graphical support, or through direct input in the parameter list

tion of same or similar processes across products, and the intuitive design of the operator interface.

www.siemens.com/startdrive



+ Simotics M-1PH8 main motors

A Variety of New Options

The Simotics M-1PH8 main motor is extended by new optional packages, such as, for example, the holding brake and the model for use in Ex zones. The M-1PH8 main motors meet every application requirement. They impress with a sophisticated modular design and greater power range than previous models – based on open-circuit ventilation, forced ventilation, or water cooling. They are available in synchronous and asynchronous versions. In addition to their performance characteristics, Simotics M main motors feature excellent design and ergonomics: the

M-1PH8 motors won the 2012 iF product design award.

www.siemens.com/main-motors

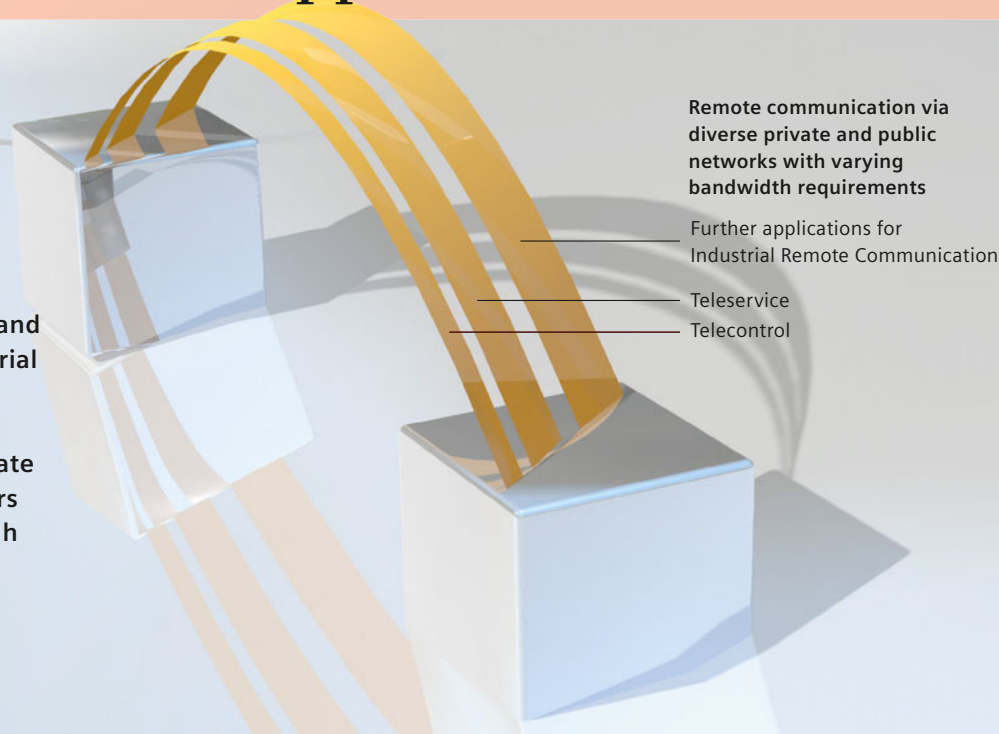
New features:

- + Holding brake for shaft heights between 80 and 225 mm
- + Ex zone 22 for shaft heights of 180 and 225 mm
- + Open-circuit ventilation and forced ventilation for shaft heights of 180 to 280 mm
- + Winner of the 2012 iF product design award

+ Industrial Remote Communication product line

New Requirements Demand New Solution Approaches

The megatrends of urbanization, globalization, population growth, and climate change are growth drivers for applications that go beyond conventional teleservice and telecontrol solutions. With Industrial Remote Communication, Siemens realizes both solutions under one roof using remote networks (private and public) – and in addition offers products for applications with high bandwidth requirements.



The TeleControl Professional system is available for conventional remote control solutions with high volumes of data over long distances, for example, in the case of oil and gas pipelines or in the energy sector. TeleControl Basic, in contrast, is optimized for substations with a lower degree of automation and up to 5,000 external stations. Industrial Remote Communication also offers products and systems that are customized to the respective customer requirements for economical remote plant monitoring and maintenance (teleservice). The Simatic Net products for remote networks of the new Scalance M product family are used mainly in cases that go beyond conventional telecontrol and teleservice applications.

Further application areas for products for remote networks

Thanks to its high downlink and uplink capacity, the Scalance M875 UMTS router supports numerous data services with large bandwidth requirements via mobile wireless to and from vehicles and is there-

fore suitable for video transmission in trains, among other things. The video data of all vehicles are collected in real time in a control center for monitoring and further processing. In addition, functions such as data connections for ticket machines, infotainment services, or proactive monitoring of vehicle technology (telemetry) are possible. The router is equipped with antenna diversity to increase the connection quality during motion. Sensitive data can optionally be transmitted through a safe VPN tunnel.

A further application area of Scalance M is condition monitoring of wind power plants. Constant monitoring is required in order to recognize in good time when the worn parts of the complex plants need to be replaced. This increases the availability of the plants and guarantees compliance with statutory safety requirements. Scalance M components for mobile communication networks are particularly well suited for connecting wind power plants to a control center, as they provide high data rates and data integrity as well as low installation costs.

Because today's power supply network will undergo a radical change in the coming years and decades, intelligent power automation is another important issue. Until now, power generation, distribution, and consumption have been largely separate; today the power supply network needs to become more intelligent because of the increasing use of less-predictable regenerative forms of energy. This means that distribution stations and local network stations must be automated and linked. The status data of the respective stations are detected and relayed to central control centers in a bandwidth-optimized manner via remote networks with Scalance M.

www.siemens.com/industrial-remote-communication

IT Security Notice

Appropriate protective measures (e.g., IT security) are to be taken in order to guarantee the safe operation of the system. Further information on the subject of industrial security can be found online at www.siemens.com/industrialsecurity.

+ Industrial Ethernet network components for all industries

New Portfolio Expands Application Areas

Following its acquisition of the Canadian supplier RuggedCom, Siemens has expanded its industrial communication portfolio by integrating the RuggedCom product line. The products, which are specifically suited for use in rough working environments, open up new fields of application in utility, transportation and infrastructure.

The RuggedCom product line includes, among other things, Industrial Ethernet switches and routers, serial device servers, Industrial Ethernet security components, modems, components for industrial wireless communication, and network management software. These products have special features to support their use in rough environments, for example, in substations, oil refineries, and metal production, and for network solutions for trains and railway lines. These features include the support of extreme temperature ranges from -40°C to $+85^{\circ}\text{C}$, compliance

with industry-specific standards such as IEC 61850 or EN 50155, and the fulfillment of country-specific requirements for the safety of plants (NERC CIP).

Industrial Ethernet network components for utilities

Thanks to these features, the RuggedCom products are suited for new applications in utilities, such as for the networking of line protection devices and control systems in substations. Here, the requirements of IEC 61850 apply, which call for an extended

temperature range and increased EMC resistance of the modules. In addition, the components used are supplied with 110 V DC power, as opposed to in the manufacturing industry, where only 24 V DC are used. In particular, the RSG2100, RS900, and RS8000 products of the RuggedSwitch line are used in this context.

Reliable network solutions for transportation

When it comes to networking systems in transportation, the sturdy RuggedCom





products also display their advantages, for example, when reliable network solutions for traffic control systems along freeways and railway lines and in tunnels or in cities need to be realized. Typical examples are traffic light systems, traffic control systems, toll systems, and call boxes, as well as video surveillance systems, ticket machines, and passenger information systems at train stations.

In all these cases, it is important that geographically dispersed units be reliably connected via wired and wireless Industrial Ethernet networks, in order to ensure

communication with a control center. For these applications, industrial switches and routers, modems, and wireless components have proven reliable.

However, a highly available network of industrial switches and routers as well as wireless components is also in demand inside vehicles – for example, in buses and trains. Here, the operating data are continuously recorded in order to reduce waiting times and optimize energy consumption. Moreover, network solutions also contribute to the increase in convenience for passengers: infotainment con-

tent such as current news and advertisement content are transferred in real time to the vehicle, and passengers have access to the Internet via wireless LAN. In addition, images from surveillance cameras are continuously transferred to the central control system via wireless LAN, to ensure the safety of the passengers. The RuggedBackbone RX1510, RuggedSwitch RSG2100, and RS969 products as well as Scalance W78x wireless components are being used increasingly for this type of application, since they are optimized for requirements such as difficult climatic conditions (they are salt-spray resistant, for example).



The RuggedCom product line is specifically suited for use in rough working environments

Equipped for tomorrow's challenges

With high-quality components based on proven standards, continuous and powerful networks can be realized that are also prepared to meet tomorrow's challenges. Products and systems by Siemens guarantee greater efficiency for industrial communication in many areas and ensure that users in all industries are well equipped.

www.siemens.com/ruggedcom
www.siemens.com/scalance

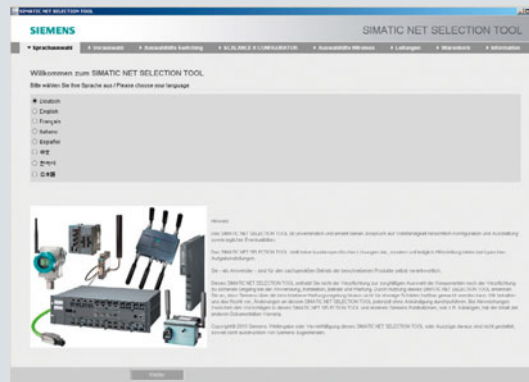
+ Simatic Net Selection Tool Version 5

IE Components Extended

The portfolio of Industrial Ethernet components is extended by the new version of the Simatic Net Selection Tool. It comprises the new device versions of the Scalance X-500 product lines and also includes the new Industrial Wireless LAN devices according to IEEE 802.11n. In addition, electrical and optical Industrial Ethernet cables and plug-in connectors can now be selected and ordered.

The Simatic Net Selection Tool is available as a download version (www.siemens.com/snst-download) or can be selected directly.

www.siemens.com/snst



New features:

- + Extended product portfolio for Industrial Ethernet switches
- + Extended product portfolio for IWLAN products according to IEEE 802.11n
- + New selection of products for Industrial Ethernet cables and plug-in connectors

+ Scalance X-200RNA

Highly Available Industrial Ethernet Networks

The new Scalance X-200RNA network access points offer a highly available system solution for smooth redundancy without delay in Industrial Ethernet networks, based on the Parallel Redundancy Protocol (PRP) according to IEC 62439-3. It is designed for all applications and branches where a network connection with particularly high availability is required. Hardware and software solutions have now been added to this range.

On the hardware side there are two device versions: Scalance X-204RNA in a plastic casing with four electrical RJ45 ports, and Scalance X-204RNA EEC (Enhanced Environmental Conditions) in a metal casing with two electrical ports and two electrical-optical combination ports for SFP (Small Form-factor Pluggable) plug-in transceivers and wide-range power supply. The Scalance X-

200RNA access points connect up to two network segments or terminals without PRP functionality via two parallel networks without delay. An access point duplicates the transmitter's telegram and feeds one copy each into the two connected PRP networks. Both PRP LANs can be structured in star, ring, or tree structures. On the receiving side, the second access point passes on the first incoming telegram to the addressee. The telegram arriving later from the other LAN is discarded. Reliable and punctual transmission is ensured due to the two separate networks and the PRP process.

The software package is Softnet-IE RNA, which allows for the cost-effective integration of PCs in redundant parallel network structures on the basis of PRP without additional programming effort. With the aid of the software, a computer can produce the same smooth redundancy connection via two LAN networks as the Scalance X-200RNA network access points.

www.siemens.com/rna



New features:

- + Very high plant availability due to parallel data transmission via separate network structures
- + No telegram delays in case of disruption of one of the two network structures
- + High flexibility of network composition as the network may have a linear, tree, star, or ring structure
- + Simple integration into network management systems
- + Fast commissioning without mandatory project planning by means of SNMP

+ Simatic RF200 with IO-Link

Simple, Economical, Open



To ensure flexible production while increasing productivity, plant operators need an industrial identification system that can be integrated into the existing automation system easily and cost-effectively. The new Simatic RF200 readers with IO-Link are the ideal solution.

IO-Link is the solution for a simple, open, and economical connection of the RFID system to the automation level, as the devices do not require complicated programming. The new Simatic RF200 readers with IO-Link are suitable for simple reading tasks ("read only"), for example, for reading an identification number or any kind of user data. They are used mainly in small assembly lines, in manufacturing logistics for tasks such as material flow control, in the identification of workpiece carriers and containers, and in intralogistics.

The complete 8-byte ID number (UID) is available to the user for further processing only 90 ms after a transponder is moved into the field of a reader.

Like all the other readers in the RF200 family, these operate in the high-frequency range of 13.56 MHz. Three different readers with a compact design and

integrated antennas are available to meet various range and design needs. Their low space requirement has a distinct advantage; the installation of larger devices is hard to implement in many plants because of the limited assembly space. There is a comprehensive portfolio of ISO 15693 transponders for various application areas, such as cost-effective smart labels for permanent attachment to the product, screw transponders for simple assembly by robot, or tags for flush mounting in metal, for example, on workpiece carriers.

Easy connection and parameterization

The Simatic RF200 readers can be connected to the control system by means of the IO-Link interface via a corresponding IO-Link master module. For example, the seamless integration in the Profinet and

Profibus fieldbuses is carried out by the two IO-Link master modules of the Simatic ET 200S and ET 200 eco PN distributed I/O systems. The Port Configuration Tool, or PCT for short, provides a convenient software system with which all Siemens IO-Link devices can be easily parameterized. The stand-alone version of the PCT, which operates outside the Simatic engineering environment, can be used to connect Siemens IO-Link devices to automation systems from other manufacturers. A device description file (IODD file) is available so that the PCT recognizes the IO-Link reader immediately. Siemens Industry Service & Support provides the IODD file and the PCT free of charge online.

www.siemens.com/ident

+ Simatic RF620R and Simatic RF630R

New Generation of RFID Readers

The reliable Simatic RF620R and RF630R UHF RFID readers for operation with Simatic S7 control systems will soon be available in a revised version. The devices have been optimized with the functions of the reader firmware V2.0 for use under difficult radio transmission conditions, such as those found in industrial production processes – for example, metallic surfaces reflect the signals transmitted by the readers, causing the radio waves to overlap and thus resulting in dead zones. Moreover, increased transmitting power or devices used at close proximity to each other cause overreach, so that the reading areas of the individual readers overlap or wrong data carriers are read out. Thanks to the new functions, the readers are able to read and write safely and stably even in significantly changing environments. Increased functional safety, lower interference potential, and reduced maintenance of the unit are the result.

The new RF620R and RF630R devices will both be launched in three hardware versions compliant with ETSI standards for Europe, FCC standards for the United States and Canada, and CMIIT standards for China.

www.siemens.com/ident/rfid



New features:

- + Automatic adjustment of transmitting power within specified parameters (power ramp)
- + Filtering of already processed transponders (blacklist)
- + Reliable communication to an explicitly selected transponder (tag hold)
- + High-performance filtering of transponders on the basis of their reading frequency (inventory threshold filter)
- + Automatic filtering of unwanted transponders according to parameterizable criteria (intelligent single-tag mode)
- + Firmware update via Step 7 possible in the future

+ Simatic RF625T

Asset Management with RFID



Siemens has broadened its UHF transponder portfolio with the Simatic RF625T. This new product in the Simatic RF600 series is ideally suited for use in industrial environments, due to its design and high degree of protection (IP68). The transponder can be mounted in and on metal and on nonmetallic surfaces. It is therefore not only suitable for assembly, production, and logistics applications, but also for the permanent equipment of tools, machines, and units for RFID-supported asset management. The temperature range from -25°C to +85°C, the technology with 128-bit EPC Class 1 Gen 2 storage capacity and 512-bit user memory, plus the maximum range of 1.8 m on metal, make the Simatic RF625T a problem-free tool for sophisticated production processes.

www.siemens.com/ident/rfid

New features:

- + Flush-mounted assembly in and on metal without any problems
- + Compact, small design
- + Range of 1.8 m on metal
- + Maintenance-free operation and long durability
- + IP68 degree of protection

+ Simatic RF640R

Compact Smart Reader in the UHF Range

The new Simatic RF640R is a compact, fully integrated smart reader for demanding RFID detection tasks in single locations, for example, in materials handling or manufacturing logistics. The reader has an integrated antenna and is therefore space saving, low maintenance, and cost-effective in installation and operation. It also covers greater operating distances thanks to its high maximum transmitting power. Further field devices can be connected via two digital inputs and outputs.

The reader is available in three versions: compliant with ETSI standards for use in Europe, FCC standards for the United States and Canada, and CMIIT standards for China.

www.siemens.com/ident/rfid



New features:

- + Support of the global standard EPCglobal Class 1 Gen 2 / ISO 18000-6C
- + High reading rate and high reading speeds
- + IT integration by means of XML protocol via TCP/IP (Industrial Ethernet)
- + Configuration with user-friendly RF-Manager Basic software
- + Support via Simatic RF-Manager Edition 2008 SP 3
- + Suitable for industrial applications due to high degree of protection (IP65)
- + Compatible software interface with RF670R for subsequent scaling of reading points
- + Easy project planning due to integrated processing possibilities

+ Simatic MV420

Individually Configurable Code Readers



The Simatic MV420 complements the portfolio in the area of small, simple code readers. The Simatic MV420 is especially suitable for reading distances in the near to medium range of approximately 15 mm to 400 mm. The list of readable codes includes all the well-established matrix and bar codes. The Simatic MV420 family of devices is characterized by flexibility, reliability, and ease of use.

The devices can also be configured individually for applications that are tailored to different lenses and lighting. In addition to the Simatic MV420 SR-B (Basic) and Simatic MV420 SR-P (Performance) devices, a 16 mm lens and a 6 mm lens including a lens tube, as well as a white, red, or infrared ring light, are available.

www.siemens.com/codereader

New features:

- + The smallest code-reading system from Siemens, now also individually configurable
- + Different ring lights for optimum lighting and contrast
- + Highest optical quality, even with different reading ranges, through choice of appropriate lens



+ Simatic MV340

Handheld Readers for Demanding Applications

With the Simatic MV340, Siemens adds a new high-performance handheld reading device to its code-reading system portfolio. The new device is one of the most powerful handheld reading devices in the world and therefore especially suitable for demanding applications. It reads various direct part markings (DPMs), from linear bar codes to 2-D symbols, without requiring reconfiguration. Thanks to special interpretation logic, the Simatic MV340 can read even difficult, low-contrast codes.

The device has a robust design, which makes it ideally suited for use in industrial environments. The communication connection and power supply are established via the enclosed USB cable. Alternatively, a connection via RS232 is possible; the corresponding accessory for this is available.

www.siemens.com/codereader

New features:

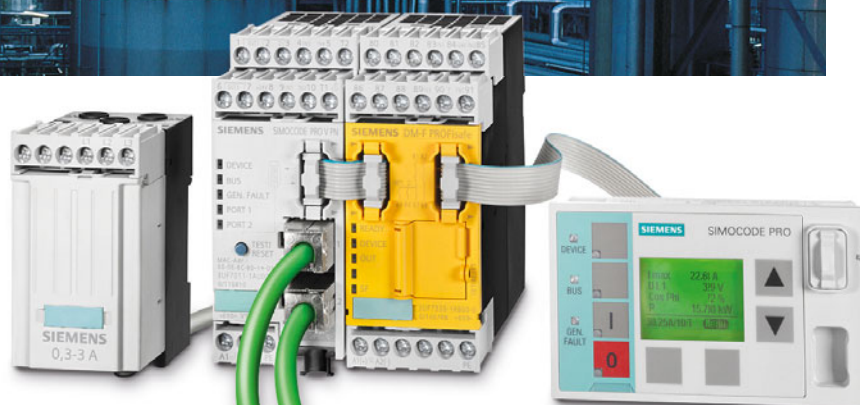
- + High-performance interpretation logic, even for hard-to-read codes
- + Special integrated lighting for reliable operation, even in the event of fluctuating lighting conditions
- + High reading speed
- + Suitable for industrial use due to robust, ergonomic design
- + Power supply and data communication via USB connection

+ Sirius motor management for Profinet

Simocode pro Goes Ethernet



In addition to using Profibus, it is now also possible to connect the proven Simocode pro Sirius motor management system to higher automation systems via the Profinet Industrial Ethernet standard. This offers users not only new functions for diagnostics, control systems, and the protection of motors, but also improved energy management.



The new Simocode pro for Profinet has two integrated RJ45 interfaces, allowing the user to connect the system to higher control systems such as Simatic S7. In addition, media redundancy functions can also be realized thanks to Profinet. This means that data are available in a ring topology network structure even when a communication channel fails, resulting in higher plant availability and thus also an increase in productivity.

However, customers' requirements regarding communication capability today are no longer limited to pure control tasks. Aspects such as uniformity, open design, and availability play an increasingly important role. In addition to communica-

tion via the control system, Simocode pro for Profinet offers new and easy-to-implement diagnostics and control options. For example, the system's new Profinet basic device provides an integrated server for web diagnostics as well as an integrated server for OPC UA, the standard for manufacturer-independent communication in automation technology. Through the web server alone, all diagnostics and service data of the motor branch circuit are available – directly on-site or remotely via the Internet – by using a PC with a standard web browser. The integrated OPC UA-server also enables these data to be called up via HMI panels at the field level by the higher SCADA system. In addition, it is

possible to send control signals with OPC UA via a secured connection from the control system. This makes monitoring and controlling motors and thus protecting the drives even more effective, easy, and flexible.

Thanks to the connection via Profinet, Simocode pro can now also realize Profienergy functions. This way the motor can be turned off during downtimes, and measured values and status information can be retrieved and passed on to the energy management system during operation. The energy requirements and costs in the plant are significantly reduced.

www.siemens.com/simocode



+ Sirius Innovations

Switching Pays Off

With the newest version of the Sirius modular system, users have at their disposal perfectly matched components for switching, starting, protecting, and monitoring plants and motors. The highlight: installation is easier than ever thanks to pluggable function modules, reducing expenditures for wiring, configuration, and maintenance. Moreover, multiple diagnostics options ensure maximum transparency for the plant operator.

Switching from the classic Sirius modular system to Sirius Innovations offers three-fold savings through lower configuration and installation costs as well as reduced energy consumption.

www.siemens.com/sirius-innovations

New features:

- + Up to 80 percent lower configuration costs thanks to complete data availability
- + Up to 48 percent savings on installation costs when using function modules
- + Up to 92 percent less energy consumption when using contactors with UC drive
- + Over 35 percent shorter downtimes through fast diagnostics with IO-Link

+ Simocode pro initialization module

Perfect Interaction

With the new initialization module for Simocode pro, the switchgear and motor management system work together even more closely. Using the draw-out technology often used in MCCs, the initialization module is firmly integrated into the switching device. This way, branch-related parameter and address data are mapped to precisely the appropriate branch. Manual programming after a device has been replaced is thus no longer required.

www.siemens.com/simocode

New features:

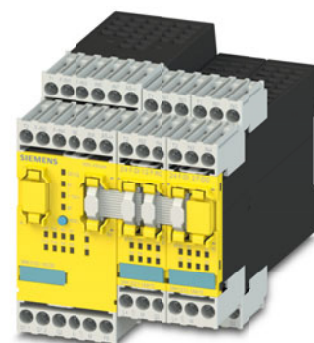
- + Automatic, branch-related mapping of parameter and address data
- + No manual programming necessary after replacement

+ Modular safety system (MSS) Sirius 3RK3

More Flexible With AS-Interface

Two new MSS central modules – ASIsafe extended and basic – complete the MSS portfolio. Representing the further development of Siemens safety monitors, they open up new possibilities in the implementation of safety functions at the AS-i bus. Lateral communication between central modules is easily realized. The number of inputs and outputs can be flexibly modified using expansion modules or AS-Interface. This allows the available volume to be adapted to the appropriate application at any time. In addition, an interface module enables the transfer of diagnostics and status data into a higher automation network via Profibus. The MSS ES parameterization software offers fast and easy parameterization of the safety functions as well as extensive diagnostics options.

www.siemens.com/sirius-mss



New features:

- + Higher number of release circuits (2 to 20)
- + Up to 2 expansion modules for additional I/Os
- + Up to 250 logic modules and muting
- + Up to 10 independent, distributed, and fail-safe cut-off groups per AS-Interface



Systems and solutions: *advance*

advance product news is also included with its "sister" magazine, *advance*, which is issued four times a year. In this magazine you will find interesting application stories and detailed product presentations ranging from automation technology to sensor technology. Every issue features an in-depth treatment of a current topic with news, and service articles rounding off the magazine to provide a fun and informative read. +

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