



How can you optimize
your processes in the
beverage industry?

**Totally Integrated Automation:
The portfolio for integrated automation**

Answers for industry.

SIEMENS



Perfectly matched: Our offer for the beverage industry

Increasing competitive pressures, ever more stringent legal regulations, rising costs of commodities and energy and consumers whose preferences are subject to rapid change – beverage companies today are forced to increase their flexibility and operate with maximum efficiency at the same time. But how? The key is an integrated process approach. After all, if all processes are perfectly coordinated with each other and reliable communications have been established between all parts of the manufacturing plant, it is much easier to address the big challenges. Today and tomorrow. Ranging from higher flexibility for customization to cost savings through leaner and more efficient processes. Our integrated portfolio offers you the right ingredients.

Why island solutions are difficult to digest ...

Beverage companies that want to make their processes more efficient are often hampered in their efforts by the existing plant structures. Island solutions are predominant. Machines from different vendors are combined in structures that offer little flexibility and are difficult to modernize. Communications, as far as available, would require much effort to implement. System maintenance is costly. There is no comprehensive control of the process. In other words: Island solutions are costly over the long term and offer little room for change.

... and integrated automation can whet your appetite.

But change is what is really needed, especially in view of the increasing cost pressures that the beverage industry – like other industries – is facing today. The safer and easier path to optimization leads through integrated automation – based on international standards. From incoming goods to outgoing goods. From the production to the ERP level. After all, the more holistic the view of business processes is, the more potential for productivity improvements can be exploited. We have contributed our experience from a wide variety of industrial sectors for the development of a holistic and integrated industry offering for the

beverage industry. By closely communicating with our international customers from the food & beverage industry, we are continuously expanding our portfolio along the specific needs and market trends of the industry. Today, standardized products, intelligent systems and tailored services support maltings, breweries and softdrink companies around the world in their efforts to increase productivity.

The most important ingredient for more productivity: Integrated automation.

It helps you:

- minimize Total Cost of Ownership
- increase the flexibility of processes and reduce time-to-market
- maintain a consistently high quality in large quantities and at a global level
- achieve compliance more effectively

In other words: Our range of products and solutions will suit your taste. Enjoy!

Suiting your taste: Answers for current challenges

Lower life cycle costs, higher flexibility, constantly high quality, consistent taste and more transparent processes – on the basis of Totally Integrated Automation and Totally Integrated Power, our comprehensive, integrated portfolio for the beverage industry delivers answers for your current challenges.

Reduced Total Cost of Ownership

Every far-sighted entrepreneur will make an attempt to reduce the costs over the entire life cycle of a plant. This will not only cover the investment costs but also expenditures for operation, service and maintenance. Each of these areas has an inherent optimization potential. To exploit it, our integrated offering provides a number of options for the beverage industry. They are all based on Totally Integrated Automation, which enables the integration of all partial production steps as well as an end-to-end flow of information from the field level to the board level. The consequent standardization decreases interface problems, thus reducing the required time and costs over the entire life cycle of your plants.

Shorter time-to-market

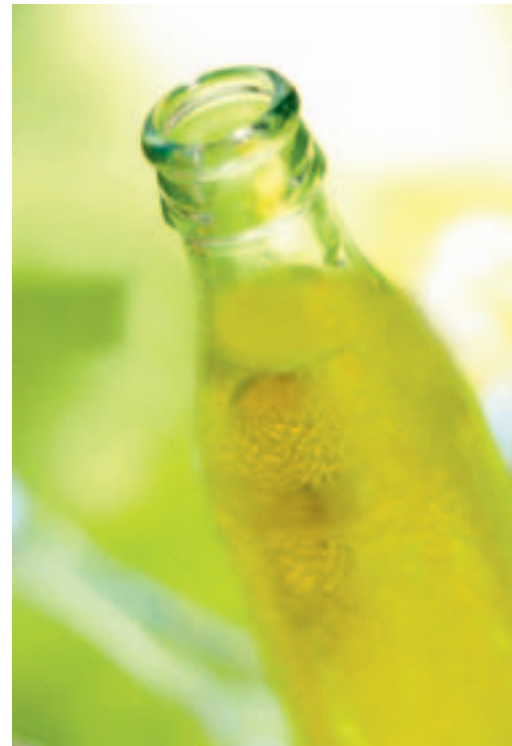
Ever new flavors for soft drinks or the current success of beer mixes – to benefit from these market potentials, one would especially need to respond quickly. For the automation of your batch processes, our modular process control system SIMATIC PCS 7 provides a uniquely smart solution: No other system in the market allows you to change recipes as quickly and easily as SIMATIC Batch. The same applies to filling. This is another field where we provide solutions that can increase your flexibility and profitability.

Consistently high quality

A consistent taste has always been important for a brand. However, globalization adds another edge to the topic. Our offering can support you in different ways. For example, you can very precisely define your recipes with SIMATIC Batch and control them easily and safely across all process steps – this ensures that a consistent quality is produced and the predefined parameters are strictly observed. Even across multiple locations. Our MES solution SIMATIC IT offers you complete lab information management. And our process instrumentation provides flowmeters, position controllers or level sensors for perfect quality assurance directly in the process.

Fast and precise tracking & tracing

When it comes to food, legislation does not permit any compromise. And rightly so. After all, this is about protecting the consumer. However, tracking and tracing capabilities, as prescribed by EU Directive 178/2002, do not only serve the consumer – the transparency it involves also offers immense benefits for companies. Process information can promote a better understanding of production and business processes and a targeted detection of optimization potentials. Our MES solution SIMATIC IT provides you with the proper tools for the purpose.



More productivity with Totally Integrated Automation

The trend moves away from individual devices or machines and toward integrated automation solutions. With Totally Integrated Automation, our unique offering for automation, we consistently implement this integration. Totally Integrated Automation is an integrated platform for the entire production line – from goods in through the process and production areas to goods out. But integration is not limited to the production process. With a consistent engineering environment, end-to-end open communications as well as intelligent management systems and IT solutions, we also cover all business-critical areas. From building automation and power management to MES to service and maintenance.

Higher energy efficiency with Totally Integrated Power

Energy costs are becoming ever more relevant. Therefore, it is good to know that our Totally Integrated Power also offers integrated solutions for power distribution that reveal distinct savings potentials. Totally Integrated Power relies on the integration of planning and configuration from medium voltage to power outlets, on closely matched products and systems as well as communications and software to connect power distribution systems to industrial automation or building automation.

SIMATIC PCS 7 scales
to plants of every size



Flexible process control: SIMATIC PCS 7

In the field between the opposing poles of complex processes and cost-effective operation, our SIMATIC PCS 7 process control system opens up entirely new dimensions. Contrary to conventional process control systems, it offers a uniquely scalable architecture with powerful engineering tools and comprehensive auxiliary capabilities such as Batch or Asset Management.

SIMATIC PCS 7 assumes the control of the primary process as well as of all secondary and follow-up processes such as refrigeration, air, steam etc. As an essential component of Totally Integrated Automation, our process control system consequently relies on its integration in data management, communications and project planning. Based on state-of-the-art SIMATIC technology and relevant industry standards, such as Industrial Ethernet or PROFIBUS, SIMATIC PCS 7 excels by its exceptional performance, reliability and convenient as well as safe operations. It enables a more cost-effective design and operation of process control systems. In all phases of the life cycle and covering all aspects: from planning, engineering, commissioning and operation to service, maintenance or expansion.

Flexible and scalable

The modular architecture of SIMATIC PCS 7 comprises selected hardware and software components from the SIMATIC standard portfolio. This allows it to adapt flexibly to different customer requirements and plant sizes and to grow easily along with subsequent increases of capacity or technological changes.

SIMATIC PCS 7 libraries

SIMATIC PCS 7 provides tools that permit the implementation of specific functionalities for your industry. These so-called Industry Libraries are standardized, on-demand configurable and reusable modules that greatly facilitate the engineering of business and production processes. The libraries that incorporate the essence of process expertise address typical industry-specific processes, such as boiling, homogenization or germination.

Recipe control with SIMATIC Batch

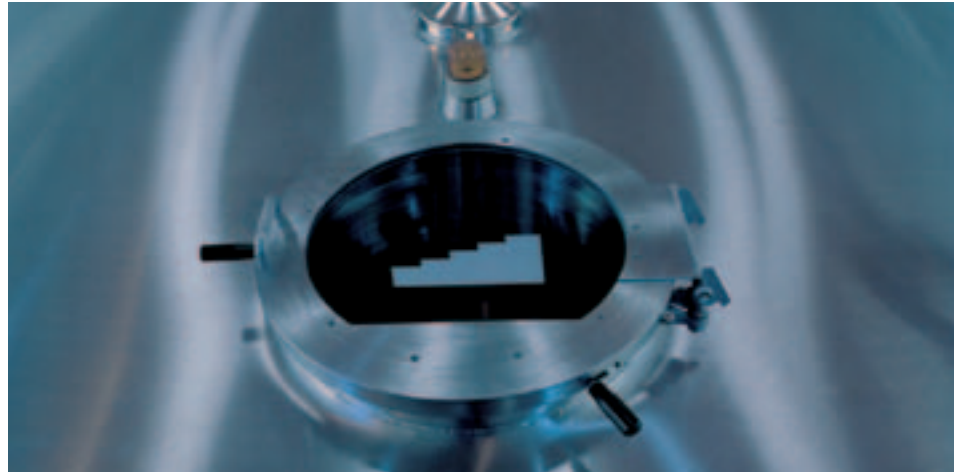
With SIMATIC Batch, SIMATIC PCS 7 offers smart add-on functionality for the flexible automation of batch processes. The modular batch system, which can be deployed as a single-user system or in a distributed system, offers diverse and powerful capabilities.

SIMATIC Batch consolidates all single steps of your batch process into an optimized and integrated overall process. From material reception to production to filling. Your existing infrastructure is fully integrated. Based on the ISA S88.01 standard, all process steps can be equally defined, controlled and, if required, modified without interrupting the process. Another benefit: Automation and the batch system access the same database. This results in a seamlessly integrated process – with optimized interfaces and maximum flexibility.

All batch-related data can be managed in a user-friendly way through a graphical user interface, the Batch Control Center. Without particular qualification requirements, every plant operator can overview the entire process. An especially interesting feature is the graphical recipe editor. This convenient tool permits the easy, intuitive creation and modification of processes.

By the way: No other system in the market permits such fast and easy changes of recipes as SIMATIC Batch.





The economic solution for breweries:
BRAUMAT Packages

Efficient route control

SIMATIC Route Control provides powerful help for plants with a widely distributed pipework or large tank farms. It offers an easy way to schedule, control, monitor and diagnose all material transports. The sophisticated route control of SIMATIC PCS 7 is equally well suited for simple transport routes and complex route networks. SIMATIC Route Control reduces the planning effort, makes route networks transparent and simplifies plant changes.

Integrated Asset Management

Maintenance functions and data used to be only available at a separate level that was independent of production. SIMATIC PCS 7 uses an integrated Asset Management capability to close this gap, providing you with exactly the information you need to reduce your Total Cost of Ownership. In parallel with process control, maintenance and plant information or functions that relate to the system components of your plant are made available within the process control system. This eliminates the need of additional hardware or software for Asset Management functions.

Tailored solution for breweries: BRAUMAT Packages

A considerable number of breweries worldwide, from small regional businesses to large international corporate groups, has been benefiting for years from integrated and efficient process automation with BRAUMAT. We are committed to align BRAUMAT even more closely along the current and future requirements of the brewing process. For this reason, we offer our BRAUMAT process automation system not only as a freely configurable system but for the first time also in the form of two customized BRAUMAT Packages, which are tailed to the specific requirements of smaller breweries (BRAUMATcompact) and large breweries (SIMATIC PCS 7 Braumat). In this manner, you get exactly the functionality you need – no more, no less.

For continuation of the installed base

BRAUMATclassic:

BRAUMATclassic will remain as a stand-alone product line for servicing the installed basis. Furthermore, we have concepts for the migration of existing plants into the PCS 7 based world of BRAUMAT.

Standardize the filling process, reduce costs: Optimized Packaging Line

The filling process represents a huge cost factor. In breweries, its costs can amount up to 75% of total production costs. There is a lot of unused optimization potential here. However, efforts to exploit this potential will frequently be hampered by plant structures that are characterized by island solutions. With Optimized Packaging Line, our integrated automation solution for packaging lines and machines, we take a different approach.

Productivity from the beginning

Optimized Packaging Line (OPL) integrates the entire filling plant at a common automation and communication standard, creating the basis for a full exploitation of the optimization potential over the entire life cycle.

To achieve this, OPL relies on two levers:

- Standardization: Standardization and thus reduction of interfaces as well as the hardware and software used to a carefully selected portfolio of components in order to significantly improve the line efficiency.
- Integration: Interconnection of all parts of a plant on the basis of a sustained concept in order to achieve a lasting increase of productivity through a combination of efficient material flows, transparent communications and consistent operating procedures.

Optimized Packaging Line offers you a number of benefits all down the line. To mention only a few of them: Once the plant is accepted, any start-up issues are greatly reduced, operation and service are greatly facilitated, causes of problems are detected earlier and can be eliminated more easily – and you can safely invest in the future, thanks to modularity and scalability.



More efficient filling with
Optimized Packaging Line

The benefits with Optimized Packaging Line:

- Lower investment costs due to reduced risks in line integration and a minimized number of system suppliers and service providers
- Higher line efficiency, productivity and availability in operation as well as a greatly reduced need to stock spare parts
- Lower Total Cost of Ownership due to reduced training, labor and service costs and higher protection of your investment due to a consistently modular and scalable design



Synchronized production with MES: SIMATIC IT

Integrated production analysis, resulting in optimized processes, efficient quality assurance, worldwide identical products and easier traceability – these are just some of the advantages that our modular Manufacturing Execution System SIMATIC IT offers. Its broad range of components permits to optimally plan, execute and document production and development processes.

The result: improved plant efficiency.

SIMATIC IT synchronizes and coordinates the individual components of a production plant. This permits the description of production processes and operating procedures. SIMATIC IT closes the information gap between business and production level and integrates all processes that are key to business success. It standardizes the production process, matches it to the supply chain and implements the integration with ERP.

Modular and scalable

SIMATIC IT fully embraces the principle of modularity. Therefore, SIMATIC IT Framework provides the perfect basis to which all other components can be added as required. Your benefit: SIMATIC IT can be optimally customized for your needs in the form of individual product bundles. This follows the principle: As much MES functionality as necessary, and as easily and economically as possible. SIMATIC IT also offers the best possibilities if you opt for a step-by-step investment in an MES solution. By selecting the proper bundle with the required functionality, you can make a successful entry into an MES solution that you can match to your increasing requirements as needed.

SIMATIC IT offers you different bundles for the beverage industry:

Integrated production analysis

To produce at a high, reproducible quality level, information on all process and quality data is required. SIMATIC IT Historian collects, classifies, processes and calculates all relevant data of your plants – company-wide –, thus simplifying the task of an integrated production analysis. In addition to product quality, this also comprises the availability of the plant as well as compliance with legal regulations. The result: optimized processes, consistent quality assurance and improved availability over the entire life cycle of your plants. In addition, SIMATIC IT Historian monitors the attainment of the defined key performance indicators (KPIs), e.g. yield, duration of utilization or energy consumption, and offers a full set of reporting functions.





Perfect quality management

The statutory regulations for guarantee and warranty of quality are becoming stricter and stricter. With SIMATIC IT Unilab we help you optimally control the resulting effort and efficiently achieve compliance with all regulations. The lab information management system integrates the entire workflow in the lab. Process data and information can be evaluated at any time during daily routine operations and forwarded to the entire system. In this manner, the results of quality assurance measures are always available and can be used accordingly. Another benefit is that the documentation task is made easier.

Worldwide consistent quality

Everyone who wants to get innovative products to the market fast must ensure consistent product specifications – worldwide and at every time. As a full product database for the entire company, SIMATIC IT Interspec creates the perfect basis for an intelligent product life cycle management and permits the worldwide sharing and standardization of product specifications.

Optimum tracking and tracing

Manual tracking and tracing? Why complicate things when they can be much easier. SIMATIC IT replaces handwritten with automatic recordings. Moreover, for faster troubleshooting, every product can be checked online in its different processing steps and compositions. From raw material to the bottle and vice versa. And: Reports from the different parts of the company link these data with predefined quality data. In other words: Quality is always transparent – and you are on the safe side.

Efficient product flows with RFID

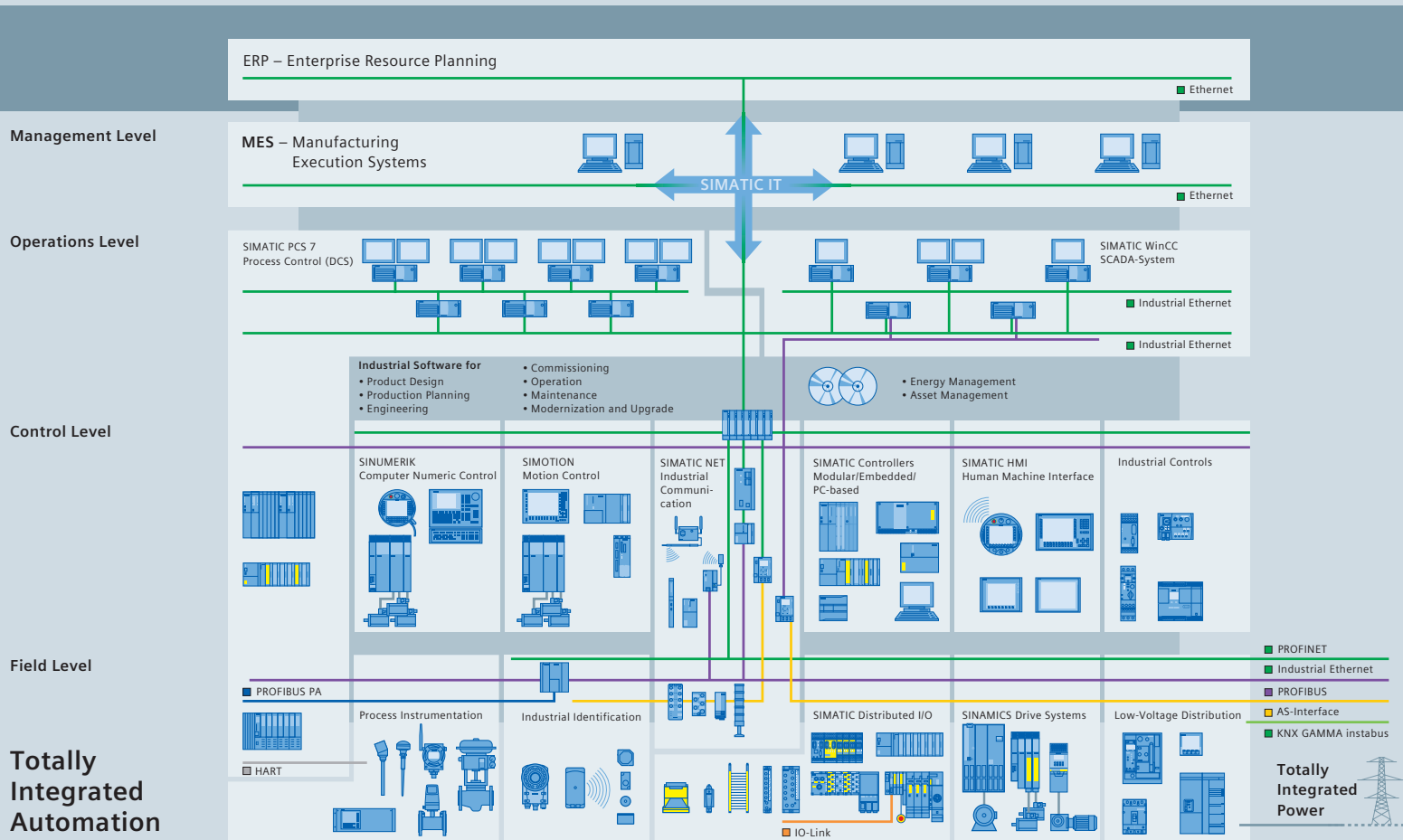
SIMATIC IT permits the connection of RFID components to enable the online acquisition of product flows. So you will always know what is where and in what quantity. The SIMATIC IT Production Modeler converts the RFID data into information that you can put to use in your business processes. In this manner, SIMATIC IT also ensures an intelligent link between RFID technology and the business management system.

Integrated from A to Z: Products from the controller to the field level

With Totally Integrated Automation, Siemens is the only provider of an end-to-end, integrated portfolio of products and systems for the automation of the entire production workflow. From incoming goods to outgoing goods. Totally Integrated Automation reduces the complexity of the automation solution, providing real value: the meaningful combination of optimally coordinated individual components – without the interface problems.

Totally Integrated Automation integrates not only the production process but all parts of the company – from the field level to the management level. The result: a perfectly coordinated total concept that enables higher productivity.

The overview below shows a selection of our industry-specific portfolios of field devices for the beverage industry.





Process control and Manufacturing Execution System (MES)

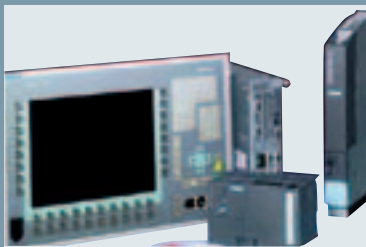
The SIMATIC PCS 7 process control system offers various possibilities for the connection of peripheral units and for the collection and output of process signals via sensors and actuators.

SIMATIC IT, the MES-System from Siemens closes the information gap between business and production level and implements the integration with ERP.



Controllers and HMI

We offer you a consistent range of SIMATIC controllers for cost-effective and flexible automation – from programmable logic controllers (PLCs) in modular, embedded and PC-based architectures to distributed intelligence to complete units consisting of controller and operator panel. By the way: With SIMATIC HMI, we also offer you a full range of operator panels and visualization software for machine-level operation and visualization, all the way to a scalable SCADA system – from a single source.



Motion Control

Our globally successful portfolio of products and systems helps you solve every Motion Control task confidently and economically. An especially convenient solution is the innovative and flexible SIMOTION Motion Control system, which combines Motion Control, PLC and technology functionality in a single system, providing far-reaching advantages.



Industrial communication

Solving communication tasks efficiently – this is what SIMATIC NET stands for. Opt for the open, end-to-end communication of your automation solution and leverage the advantages that are achieved through the expansion of Industrial Ethernet into the field level, the integration from field level to management level, the integration of information technologies as well as the wireless connectivity with Industrial Wireless LAN.



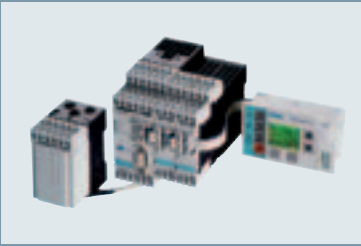
Sensor systems

Sensors: With SIMATIC Sensors, we offer you a full portfolio of proven and innovative sensors for a wide variety of requirements in different production areas: from proximity switches and safety sensors to RF identification and machine vision systems. With innovative, intelligent products and as an integral part of Totally Integrated Automation, SIMATIC Sensors support additional productivity, availability, efficiency and cost-effectiveness.



Process instrumentation and Analytics: For operation with SIMATIC PCS 7, our portfolio provides a full range of devices for process instrumentation and analytics, including:

- Instruments to measure flow rates, pressure, temperatures and levels
- Position controllers
- Gas analyzers
- SIWAREX weighing systems



Motor management

The SIMOCODE pro motor management and control device provides comprehensive motor protection and motor circuit monitoring, integrated software controls for all typical switched motor applications, detailed motor and system diagnostics as well as an integrated PROFIBUS DP interface. SIMOCODE pro complies both with the requirement of safety separation and the NAMUR regulations.



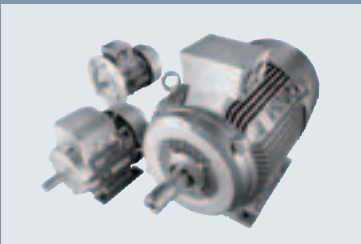
Motor starters

Our SIRIUS motor starters are the adequate choice for motor switching and protection or starting. Whether centrally in the control cabinet or directly in the field – our motor starters optionally integrate intelligent monitoring functions including preventive maintenance and Safety Integrated functionality. And where tailored applications are required, our customized SIVACON-MCU (Motor Control Unit) motor starters fully show their strengths.



Converters

We offer a full range of converters for a wide variety of uses in the beverage industry. SINAMICS is the world's most complete and most integrated family of drives. It covers all performance levels and provides maximum flexibility, functionality and engineering efficiency. From single basic drives to coordinate drives to multi-axis and motion control drives for demanding tasks: SINAMICS has the right drive for every area of application.



Low-voltage motors

Efficient motors need efficient drives. And because every drive application is different, Siemens offers a seamless range of motors according to NEMA and IEC standard for worldwide use:

- Energy-saving motors
- Ex-proof motors
- Motors according to NEMA standard
- New NEMA motors
- Distributed drives
- Industry-specific motors
- Customer-specific motors



Geared motors

Geared motors represent the powerful solution for drive applications at low speeds and high torques. They run reliably in the harshest conditions. The integrated units of energy-saving motor and gear provides for especially cost-effective applications. Our portfolio comprises:

- Helical geared motors
- Bevel geared motors
- Offset geared motors
- Helical worm geared motors
- Worm geared motors



Safety Integrated products

Safety Integrated is a unique, complete and consistent safety program that integrates seamlessly into the standard automation portfolio. It covers all applications in the field of safety engineering, from acquisition, evaluation and responding, to sensors and controllers to drives.

Wherever you need us: Service, support and training

With a comprehensive range of services, we support you quickly, reliably and practically over the entire life cycle of your plants. Regardless of the service topic – a competent contact will be available to you quickly and unbureaucratically as required. Worldwide!

Online support

You can get comprehensive information on our range of products and solutions on the Internet:
www.siemens.com/automation/service&support

Technical support

In case of technical questions, we offer you competent consulting and a wide range of on-demand services relating to our products and systems.
More information at:
www.siemens.com/automation/partner

Technical consulting

We also support you with the planning and design of your project: from a detailed analysis of the current situation to consulting for product and system matters to the development of the automation solution.
More information via email:
food-beverage@siemens.com

On-site service

We offer you a number of services for commissioning and maintenance to ensure the availability of your automation plants and systems.
More information at:
www.siemens.com/automation/partner

Optimization and modernization

Our offering also includes adequate services for optimization and modernization in order to increase your productivity or save costs.
More information via email:
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Configuration and software engineering

We support you with on-demand services for development and configuration – from the configuration to the implementation of an automation project.
More information at:
www.siemens.com/automation/partner

Repairs and spare parts

Our comprehensive repair and spare parts service offers you the highest level of operational reliability.
More information at:
www.siemens.com/automation/partner

Training

Our training centers in numerous locations around the world provide individual advanced training measures around the entire subject of automation as well as industrial solutions.

With a total of about 300 attendance courses, we train the entire range of the Automation and Drives product world. Teletraining, self-study software and moderated seminars on the Web add to our classic courses.
More information via email:
food-beverage@siemens.com

Solution Partners

In order to meet the growing requirements in the field of safety engineering, Siemens Automation and Drives has increased its cooperation with selected partners. These highly qualified partner companies, which are grouped under the name of "Siemens Solution Partners Automation," offer you professional consulting and practical assistance for all relevant safety aspects of your automation projects.
More information at:
www.siemens.com/automation/solutionpartner



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