



SIEMENS



Conveyor technology for every application

Individual system solutions from Siemens

[siemens.com/conveyor-technology](https://www.siemens.com/conveyor-technology)



An innovative concept ...

No matter whether it involves drives, control systems, identification or the power supply – as your partner we support you by providing you with a quotation that precisely meets your needs:

- The optimum products and systems: from the drive and automation technology through safety technology up to the power supply
- Competent technical guidance and extensive support to draw-up concepts that are truly fit for the future
- Global service, locally provided in over 130 countries

... where the focus is on you: customer and sector-specific requirements

We offer a wide variety of products and systems for conveyor-related applications in the widest range of sectors.

What do they all have in common? They are part of integrated and seamless systems and technologies and can be flexibly scaled.

When it comes to quality, reliability and safety, they fulfill the highest standards – and are available around the globe.

Not only this, with our comprehensive range of systems, we offer you a whole raft of advantages, from which machine manufacturers, plant builders and also plant operating companies can sustainably profit.

The optimum conveyor technology for applications no matter how exotic

Whether it involves conveying, sorting, storing or picking and placing pink flamingos and other more or less exotic products – in conveyor technology, seamless and integrated productivity is decisive for your success. In all sectors. Whether it involves standard applications or highly complex applications – Siemens offers you a flexible and

future-orientated solution. Individually tailored to your specific requirements. Cost-effective material flow, high precision positioning, efficiently spanning large distances, intelligence packed into the smallest space. Experience conveyor technology from its most innovative side.

Realize quickly, act close to your customers – Your advantages as a machine manufacturer and plant builder

- A field-tested and comprehensive portfolio with standard products as well as tailored systems and services.
- Intelligent tools to support engineering, selecting and dimensioning components and energy-efficient systems, parameter assignment, programming and commissioning.
- Standardization and modularization of conveyor technology components, through standard interfaces or power bus systems, for distributed plant and system concepts also in a high degree of protection.
The result: lower installation and commissioning costs as well as increased flexibility and system availability.
- Unique system and sector competence as well as a maximum degree of security for the future, thanks to leading-edge technologies and their ongoing development.

Reliably use and leverage potential – your advantage as plant operating company

- A complete product portfolio for efficient conveyor-related applications: from geared motors through motor starters and converters/inverters, sensors and switch-gear up to the automation.
- Smooth commissioning for fast plant or system ramp-up.
- The simple expandability of our systems and fast device replacement for minimum downtimes and retrofit times.
- Outstanding degree of availability through the high quality of our products and comprehensive diagnostics for preventive maintenance.
- High energy-saving potential thanks to our energy-efficient motors, motor starters, soft starters and converters/inverters as well as our power management system based on SIMATIC PCS 7, SIMATIC WinCC and multi-function measuring devices.

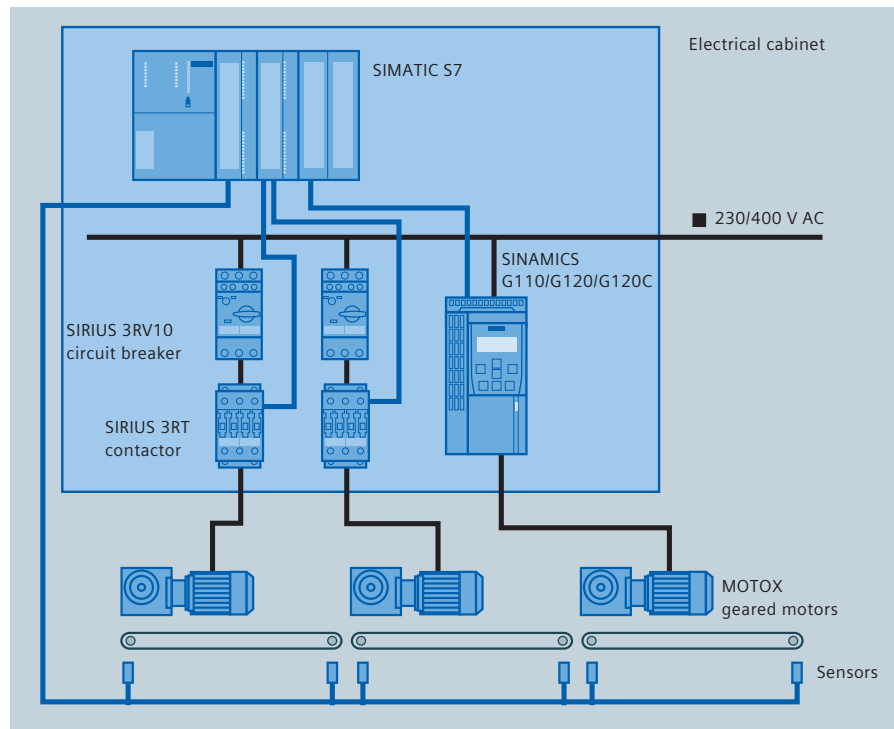
Cost-effective roller distribution using basic motor feeders and inverters (IP20)

Are you looking for a drive and automation concept for basic conveyor systems? Then we can offer you a cost-effective solution, which can be flexibly adapted to your requirements and fulfills the following demands:

- Low hardware costs
- Many drives in a small space (high drive density)
- Central electrical cabinet design
- Simple, conventional wiring (no fieldbus)

Further, Siemens offers you tailored solutions, e.g.:

- MOTOX geared motors, optionally with pluggable connection system acc. to ISO 23570
- SIRIUS industrial switchgear – this means that devices that are harmonized and coordinated with one another (circuit breaker, contactor ...) can be simply combined to create a motor feeder
- SINAMICS G110 inverters
 - compact design
 - the terminal locations are the same as conventional switching devices (contactors)
- SINAMICS G120 inverters
 - modular design
 - capable of energy recovery as option
 - with integrated safety technology as option
- Conventional control of the drive functions via SIMATIC S7 control system
- SIMATIC Ident: Identification with RFID and code reading systems for product identification and tracking



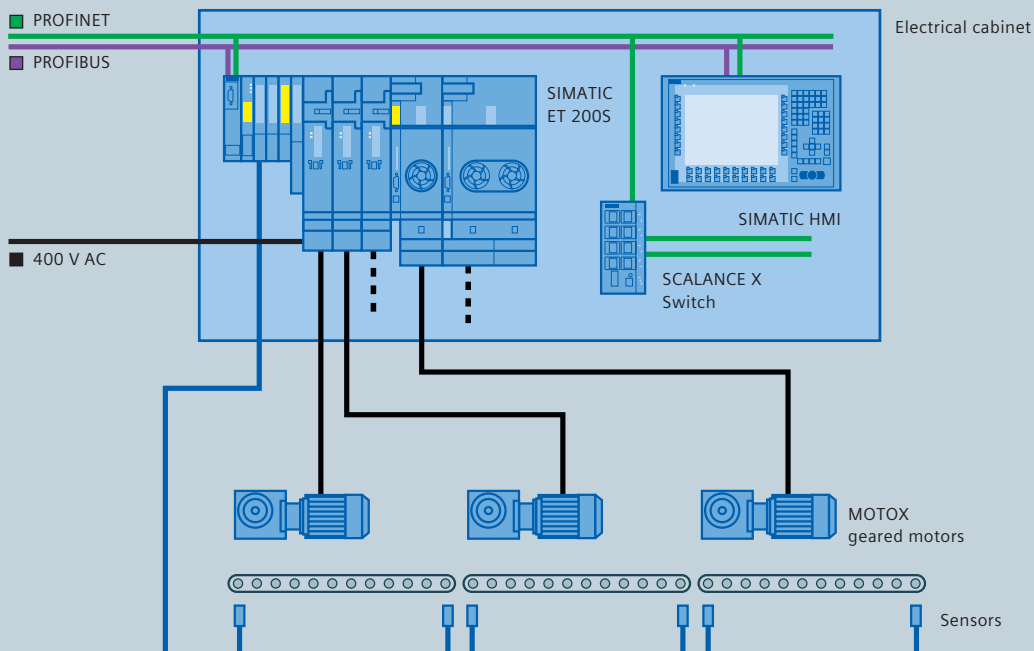
On track efficiently with the modular SIMATIC ET 200S (IP20) system

Complex conveyor technology applications demand flexible and highly available drives and automation concepts. We offer you a seamless and integrated solution, which fulfills the following demands:

- Electrical cabinet design (drives in an IP20 version) or distributed electrical enclosures
- Many drives in a small space (high drive density)
- Low space requirement
- High degree of flexibility and detailed diagnostics
- High degree of availability
- Optional safety technology

SIEMENS offers you the optimum solution, e.g.:

- MOTOX geared motors, optionally with pluggable connection system according to ISO 23570
- Motor starters (up to 7.5 kW) and converters (up to 4 kW), with the following features, integrated into the distributed SIMATIC ET 200s I/O system:
 - IP20 degree of protection
 - modules can be exchanged without requiring tools (hot swappable)
 - converters including energy recovery capability
 - only one bus address and 400 V infeed for several drives
 - high degree of flexibility as a result of the modular design
 - optional: interface module with integrated CPU
- SIMATIC Ident: Identification with RFID and code reading systems for product identification and tracking
- SIMATIC HMI for operator control and detailed diagnostics of the plant/system
- Safety Integrated is optionally available for all of the relevant components



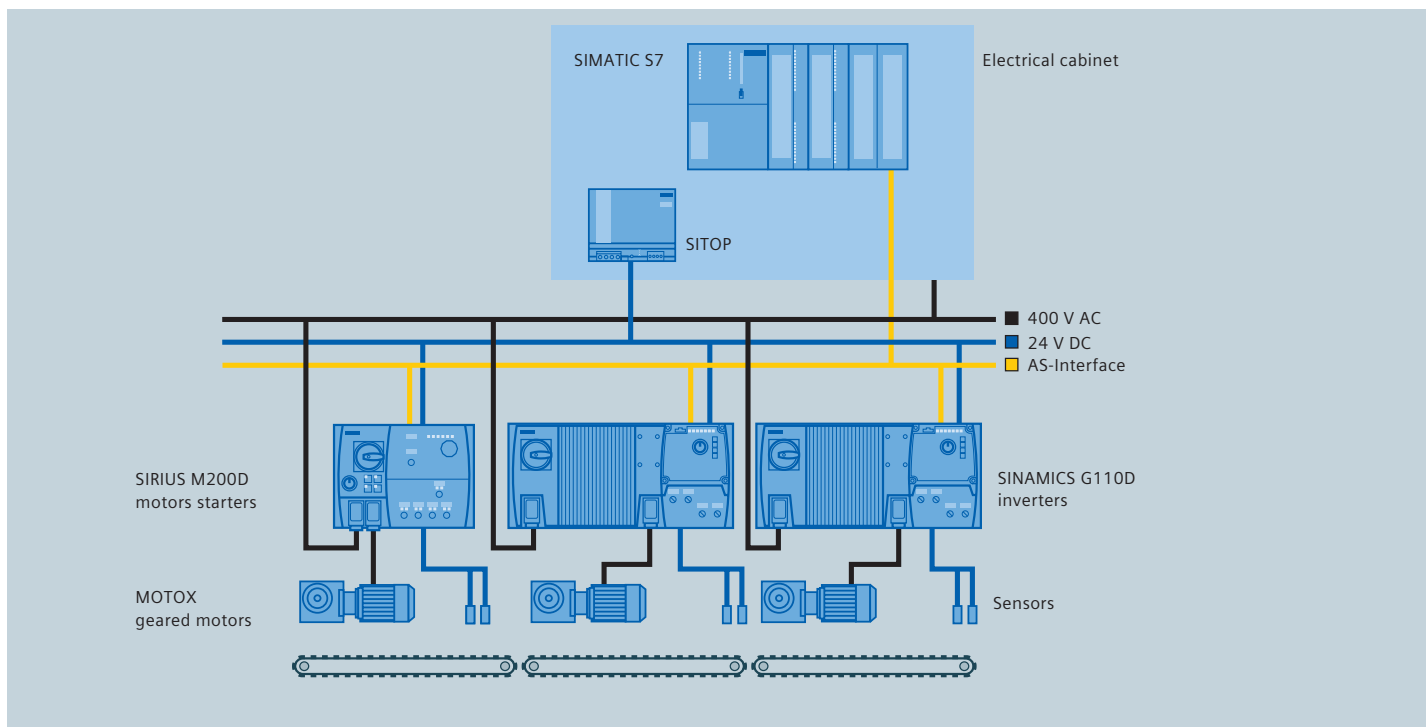
Reliably convey with SIRIUS M200D and SINAMICS G110D via AS-Interface (IP65)

Are you looking for a distributed drive and automation concept with a high degree of protection for your standard conveyor systems? We can offer you an efficient solution, which fulfills the following requirements:

- Distributed drive topology (high degree of protection)
- Simple installation and fast commissioning
- Simple to use and operate (usability)
- Standard functionality and diagnostics
- Maintenance-friendly (fast, simple replacement)

Experience tailored solutions from Siemens, e.g.:

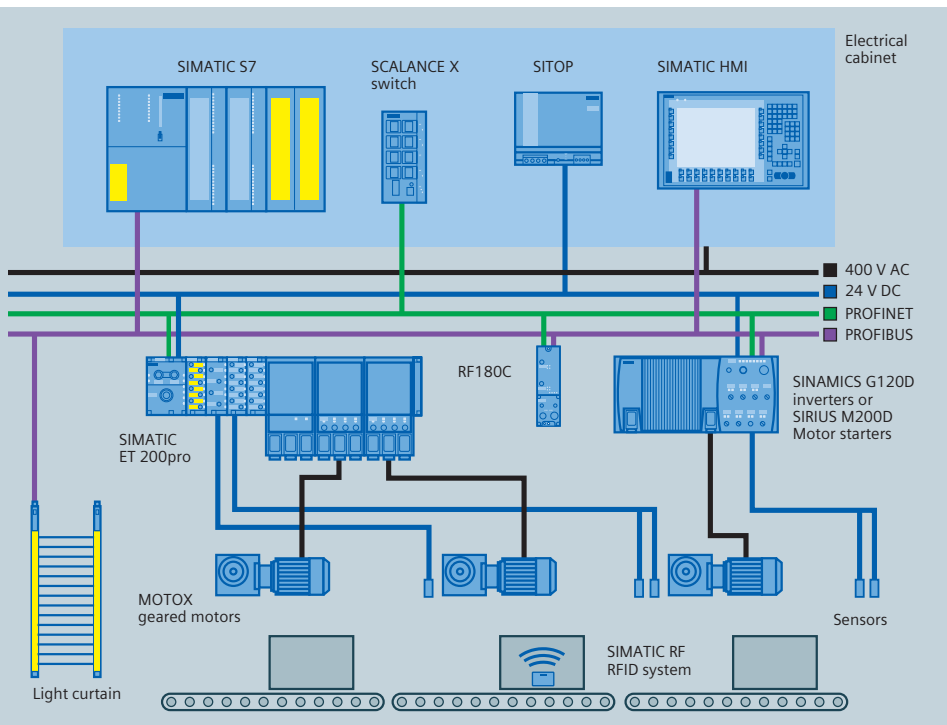
- MOTOX geared motors, optionally with pluggable connection system acc. to ISO 23570
- Distributed SIRIUS M200D motor starters (up to 5.5 kW) and SINAMICS G110D inverters (up to 7.5 kW)
 - IP65 degree of protection
 - AS-Interface for communication, parameterization and diagnostics
 - manually operated maintenance switch (in some cases, optional)
 - Quick-Stop function
 - pluggable connection system according to ISO 23570
- SIMATIC S7 controllers
- Communication processors (CP) as AS-Interface master (Spec. 3)
- SIMATIC Ident: Identification with RFID and code reader systems for product identification and tracking



Flexible with SIMATIC ET 200pro, SINAMICS G120D and SIRIUS M200D via PROFIBUS/PROFINET (IP65)

For demanding conveyor technology applications, which place high requirements on the flexibility and availability, we offer distributed drive and automation concepts that fulfill the following requirements:

- Distributed drive architecture (high degree of protection)
 - Simple installation and fast commissioning
 - High degree of flexibility
 - High degree of functionality and detailed diagnostics
 - No maintenance (fast, simple replacement)
 - Optional safety technology
- Siemens offers you a perfectly adapted and flexible solution, e.g.:**
- MOTOX geared motors, optionally with pluggable connection system according to ISO 23570
 - Distributed SIMATIC ET 200pro as combination for motors starters (up to 5.5 kW) and converters (up to 1.5 kW), SINAMICS G120D distributed inverters (up to 7.5 kW), SIRIUS M200D motor starters (up to 5.5 kW):
 - high degree of flexibility through the IP65 degree of protection and modular design
 - PROFIBUS or PROFINET for communication, parameterization and diagnostics
 - pluggable connection system according to ISO 23570
 - additional functionality in the converter, e.g. energy recovery, free function blocks (logic), optional safety technology (STO, SS1 and SLS)
 - Additional functionality in the motor starter, e.g. system monitoring using a min-max pointer, diagnostics and current value transfer and monitoring as well as integrated conveyor-related functions such as Quick Stop and Quick Stop disable
 - SIMATIC S7 controllers
 - SIMATIC HMI for operator control and detailed diagnostics
 - SIMATIC Ident: Identification with RFID and code reading systems for product identification and tracking
 - Highest network availability using SCALANCE X switches, tailored for industrial applications



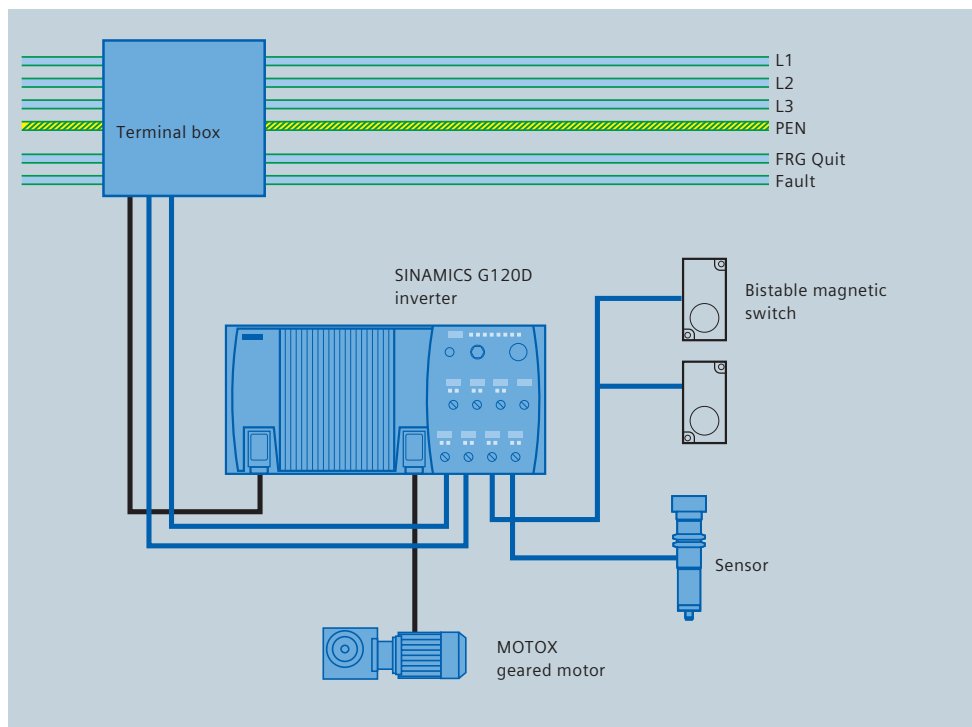
Highly productive conveying with SINAMICS G120D (IP65)

You are looking for a drive and automation concept for trolleys in a simple electric monorail with one traction drive and which fulfills the following requirements:

- Simple installation and fast commissioning
- Just a few different travel speeds
- Low requirements on the control functionality
- Simple diagnostics
- Simple to use and operate (usability)

From Siemens, we can offer you the optimum solution, e.g.:

- MOTOX geared motors for electric monorails, optionally with pluggable connection system acc. to ISO 23570
- Distributed SINAMICS G120D inverters (up to 7.5 kW)
 - pluggable connection system according to ISO 23570
 - modular design, therefore lower costs for stocking spare parts
 - capable of energy recovery, therefore a braking resistor is not required
 - compact design in an IP65 degree of protection
 - integrated “freely-assignable blocks” to implement logic functions
 - parameterizable fixed frequencies (16 different frequencies)
- SIRIUS switching and protection devices to protect the electronic and electrical components



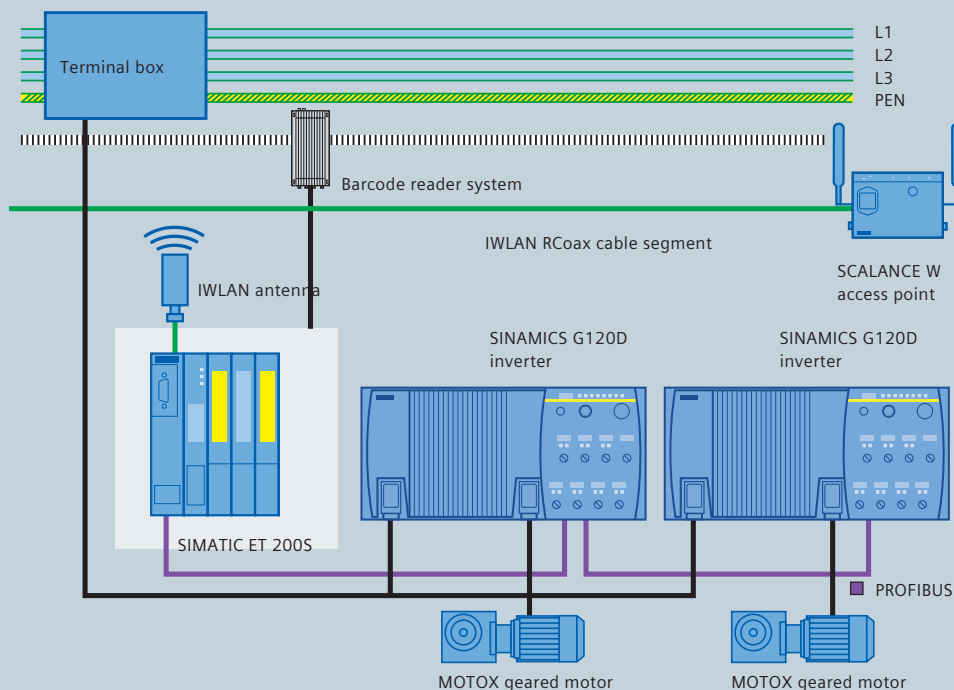
In complex situations, convey across the board using SINAMICS G120, SIMATIC ET 200S and IWLAN

The more complex the conveyor-related task, the more important a seamless and integrated solution. We can offer you a control and drive concept for electric monorails with travel as well as lifting drive and when necessary, additional drives for example for turning or swiveling. Further, the following requirements relating to functionality and flexibility are fulfilled:

- Simple installation and fast commissioning
- Flexible drive speeds
- Flexible control functions
- Detailed and extensive diagnostics
- Integrated safety functionality
- Simple to use and operate (usability)

Experience customized solutions from Siemens, e.g.:

- MOTOX geared motors and EMS geared motors, optionally equipped with pluggable connection system according to ISO 23570
- Distributed SINAMICS G120D inverters
 - power ratings up to 7.5 kW for powerful hoisting gear
 - capable of energy recovery, therefore a braking resistor is not required
 - pluggable connection system according to ISO 23570
 - modular design, therefore lower costs for stocking spare parts
 - compact design in IP65 degree of protection
 - integrated safety functionality (Safety Integrated)
- Trolley control based on SIMATIC ET 200S in degree of protection IP20
- Can be expanded in a modular fashion, therefore can be flexibly adapted
- PROFINET device with lower-level PROFIBUS
- Communication via IWLAN and RCoax (leak wave cable)
- Integrated safety technology
- RFID identification systems for product identification and tracking
- Reliably and securely communicate by wireless with SCALANCE W access points, also for high requirements

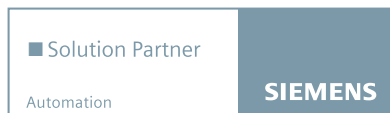


Energy-saving potential using components with unique supplementary benefits

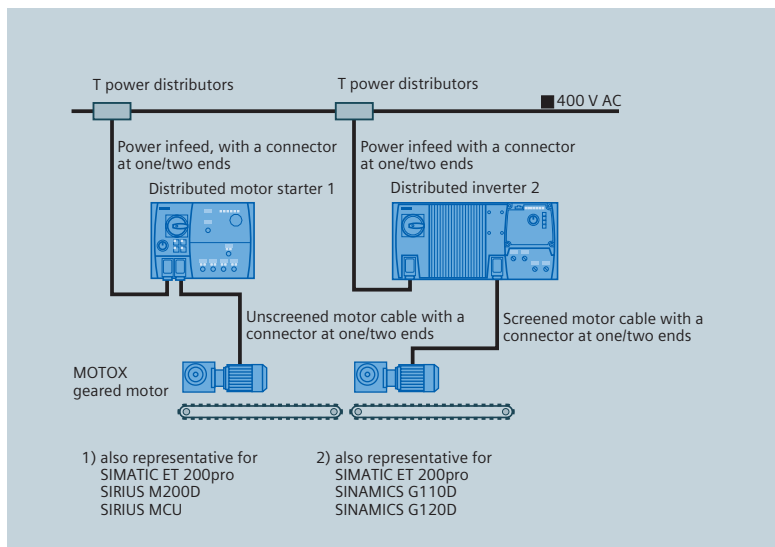
From simple up to complex: Based on products from Siemens, you can fulfill all of the usual conveyor-related tasks. Beyond this, we can offer you a wide range of features, which facilitate significant cost-saving potential. For instance, supplementary products for distributed drive technology according to ISO 23570, quick stop functionality and identification systems precisely adapted to your particular application. The advantages for you are quite obvious: Less components, simpler wiring, all of the usual bus systems, higher throughput as well as shorter maintenance times.

Supplementary products for distributed drive technology according to ISO 23570

In addition to drives and automation components, we can also offer you connection systems according to ISO 23570, such as power infeed cables, T distributors for power and motor cables for distributed drive technology. As a consequence, you profit from certified applications and system-based products that precisely fit the task and are quickly available. We can also offer customized solutions for connection systems. These supplementary products are also implemented through our Solution Partner program, which is a unique network of selected system integrators: solution providers with standard qualifications distributed around the world to support our automation and power distribution portfolio as well as product life-cycle management (PLM). The combination of our product and system know-how with the extensive application and sector knowledge of our partners guarantees perfect solutions for each and every requirement.



You can find additional connections system products under "Distributed Field Installation System" at www.siemens.de/automation/partnerfinder.



Precisely stop with Quick Stop – even at high velocities

Higher velocities in the conveyor systems, increasing demands placed on the PLC: For a standard task such as stopping products on a conveyor belt at a light barrier, this can result in problems. As the light barrier signals are transferred to the motor starters/converters via the PLC, the start position of the products on the conveyor belt can fluctuate significantly – depending on the PLC “utilization level”. The consequences include long stopping distances and lost time. However, with the Quick Stop function, the sensor is directly connected to the motor starter/converter and the extremely fast evaluation with a constant time guarantees short and precise stops. Not only this, Quick Stop is also extremely flexible:

- For the PLC signal “Disable Quick Stop”, the products are let through without stopping – for a higher throughput
- If Quick Stop is not required, then the PLC input can be freely used to achieve lower costs, higher flexibility.

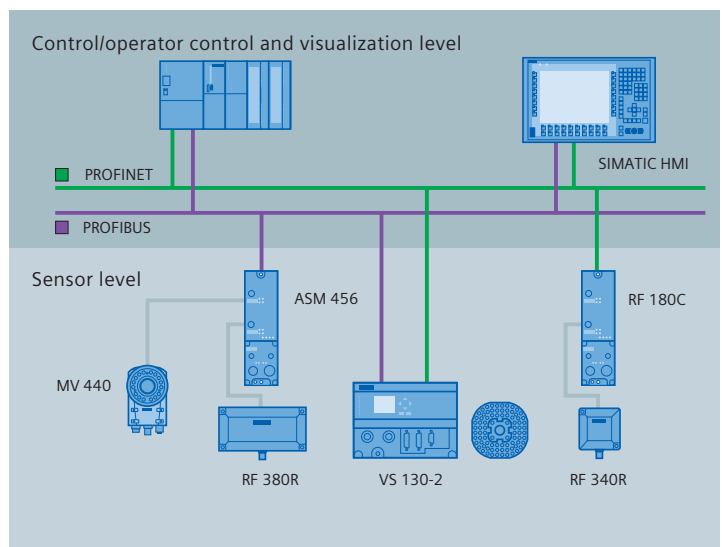
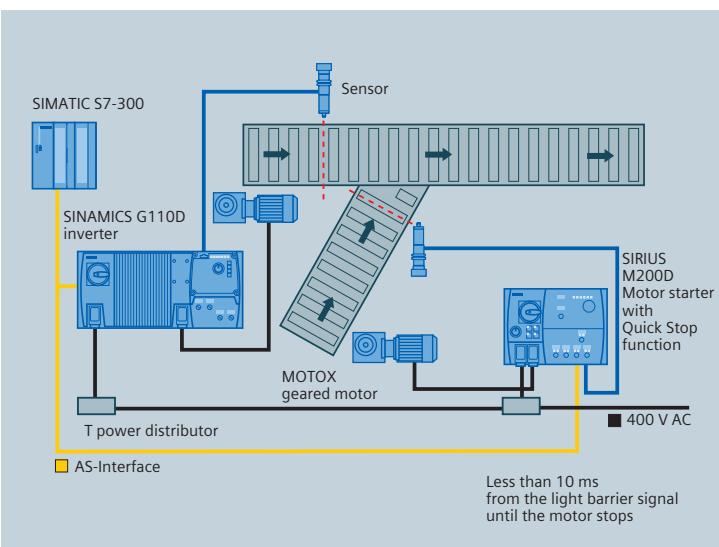
It goes without saying that Quick Stop is fully integrated into the process image in the PLC. As a consequence, device parameters and signal states are always available.

The optimum solution for each and every identification task

Whether for just-in-sequence production, or for reliable and seamless traceability of products or batches: Increasingly, machine readable and automated, contactless identification systems are used in intelligent material flow and production control environments. For instance Data Matrix Codes (DMC) or Radio Frequency Identification (RFID) set themselves apart as a result of the high data security and have proven themselves in a wide range of applications – even in harsh industrial environments. When compared to manual labeling and acquisition technologies, they allow the associated time and costs to be significantly reduced.

Main criteria for selecting the appropriate data storage and identification technologies:

- Is the data carrier reused (closed loop) or is it lost at the end of a processing chain (open loop)
- Can data be written to it once or several times within the processing chain
- Acquisition distance/ranges and light conditions/contrast
- Property of the products to be marked as well as the space available to attach marking
- Potential sources of interference such as ambient temperatures and dirt



Standard products and systems



Geared motors

- Extensive portfolio of geared motors for the highest efficiencies
- Optimal use – especially at low speeds from 0.1 to 1000 rpm and for high torque utilization
- For applications requiring a high dynamic performance: servo geared motors
- Highest cost-effective energy balance with energy-saving motors
 - IE1 = Standard Efficiency (in Europe, previously comparable with EFF2) or IE2 = High Efficiency (in Europe, previously comparable with EFF1, in the USA, previously comparable with EPAct) and a wide selection of application functions
- Extremely flexible thanks to the various formats, mounting versions and modular principle
- Optimally coordinated and harmonized with SINAMICS converters and SIRIUS motor starters
- Simpler engineering and installation using well-founded sector-oriented application know-how

www.siemens.com/gearedmotors



Drives

SINAMICS – the comprehensive family of drives

- The optimum drive for every application
- Central (IP20) or distributed (IP65)
- For space-saving, distributed solutions G110D or G120D
- High degree of ruggedness
- AS-Interface, PROFINET or PROFIBUS connection
- Capable of energy recovery
- With innovative Safety Integrated functions
- Simple engineering and commissioning using the well-proven SIZER and STARTER tools
- High degree of flexibility when engineering and expanding
- Can be ideally used in the widest range of applications: from basic roller tracks up to multi-axis high-bay racking units with a high dynamic performance
- Can be used to implement positioning and motion control functions – integrated in the drive or using a separate control
- For comprehensive motion control functions:
 - SIMOTION in different versions

www.siemens.com/sinamics



SIMATIC ET 200 converters

The converters are directly embedded in the distributed SIMATIC ET 200S or ET 200pro I/O system.

- All of the advantages of the SIMATIC ET 200S system – e.g.:
 - communications and power bus
 - simple module replacement
 - installation without tools and minimized wiring costs using self-establishing voltage buses
- Capable of energy recovery
- Safety Integrated functions

www.siemens.com/et200

More drive for all applications



Motor starters

SIRIUS and SIMATIC ET 200 motor starters

The appropriate choice when switching, protecting and starting motors

- The complete range of starting types: direct, reversing and soft starters
- From smooth, jerk-free starting up to extremely high breakaway torques
- Intelligent monitoring functions including preventive maintenance
- Safety Integrated functions

For use in the electrical cabinet

- Simple contactor/circuit breaker combinations
- Pre-wired SIRIUS 3RA1 load feeders
- Flexible SIRIUS 3RW soft starters
- Especially cost-effective SIRIUS 3RA6 compact load feeders
- Space-saving motor starters that are quickly installed for the distributed SIMATIC ET 200S I/O

For use in the field

- The SIRIUS M200D motor starter for AS-Interface, PROFIBUS and PROFINET as ideal solution for conveyor technology
- Space-saving motor starters that are quickly installed for the distributed SIMATIC ET 200pro I/O
- Especially cost-effective SIRIUS MCU motor starters
- PROFlenergy permits transparent energy acquisition and effective energy-saving

www.siemens.com/sirius-starten



Controls, I/O, software

SIMATIC Controller

With the SIMATIC controllers you have the free choice between various formats and different CPU performance classes. SIMATIC controllers offer a wide range of integrated functions and can be finely scaled regarding their performance. There are many different modules available to meet specific requirements: fail-safe components for applications with safety requirements, redundant systems for processes with a high degree of availability and technology modules for integrated technological functions such as counting/measuring, cam control, controlling or motion control. SIMATIC controllers are based on different hardware and software architectures:

- SIMATIC Modular Controllers
- SIMATIC PC-based Controllers

www.siemens.com/simatic-controller

The modular SIMATIC ET 200 family of I/O

- For distributed solutions
- Compact or modular
- Pure digital I/O interfaces or complete, distributed systems with drive technology
- Installed in an electrical cabinet or directly in tough industrial environments

www.siemens.com/simatic-et200

SIMATIC Software: universal engineering and programming environment for all of the SIMATIC Controllers

- Including the operator control and monitoring systems
- SIMATIC software supports the complete engineering workflow with the STEP 7 basis package and a wide range of engineering tools

www.siemens.com/simatic-software



Industrial identification and mechanical sensors

In dynamic markets, identification systems help companies to establish themselves. Automatic data acquisition using RFID or 1D/2D codes allows the ever-increasing requirements relating to production and material flow control, asset management, tracking and tracing and supply chain management to be fulfilled.

- RFID-Systeme und Code-Lesesysteme für die Produkterkennung und -verfolgung
 - Vision sensors for application-specific image processing
- www.siemens.com/ident

Mechanical sensors are also part of a complete conveyor system. This is where our SIRIUS detecting devices come into their own. Reliable and with the necessary precision, they sense all types of motion sequences and transfer these in the form of an electrical signal.

www.siemens.com/sirius-erfassen



Industrial PC

SIMATIC IPC

The reliable industrial PCs based on our self-developed motherboards are equipped with powerful Intel processors for quickly processing large amounts of data. They offer simple networking options and a high system availability. SIMATIC IPCs are available in various formats and with different levels of functionality:

- Rack PC – flexible and powerful in the 19" format
- Box PC – compact and rugged for general applications
- Panel PC – rugged and powerful with brilliant displays
- SIMATIC monitors and thin clients – for distributed operator control/visualization
- Devices to meet special requirements, e.g. operator units in IP65, in stainless steel, Ex-devices and customized versions

www.siemens.com/simatic-ipc



Operator control and visualization

SIMATIC HMI

The human machine interface (HMI) links the automation environment with the individual demands and requirements of an operator.

SIMATIC HMI offers an extensive portfolio of innovative as well as cost-effective products and systems for a wide range of operator control and visualization tasks:

- Simple operator panels with keys
- Compact panels for operator control using a touch screen and/or keys in various performance classes
- Mobile operator devices, also for wireless use via IWLAN incl. safety functionality
- Standard visualization software
- Flexible and scalable SCADA system for process visualization
- Optimally adapted products for special demands, e.g. especially rugged operator devices that have a full IP65 degree of protection for mounting on support arms/standard mounting feet
- Customized versions for individual requirements on request

www.siemens.com/simatic-hmi



Communication

SIMATIC NET

All machines in a plant should smoothly interact with one another. This is achieved through open, transparent communication, which not only takes place at the production level, but is integrated into all company levels and business systems. Only then can isolated automation and IT solutions be avoided. With the products of the SIMATIC NET family, designed for industrial communication, you have precisely the technology at your fingertips that is required to:

- Establish a distributed automation system
- Achieve data transparency from the field level all the way up to the company supervisory level
- Utilize the technologies of mobile communications
- Integrate IT technologies
- Communicate across all bus levels: with AS-Interface, PROFIBUS or PROFINET

www.siemens.com/simatic-net



Safety technology

Safety Integrated safety products

- Unique, complete and seamless safety program from the sensor through the control down to the drives
- Tailored solutions for compact up to highly flexible machines
- Extensive service and support
- Support when applying safety directives

www.siemens.com/safety



Power distribution and Power Management

SIVACON switchgear, SENTRON switching, protection and measuring devices and power management

Efficient power distribution within the framework of Totally Integrated Power:

- With type-tested SIVACON switchgear and busbar distributors for safe, reliable power transmission and reliable power distribution.
- With the versatile and communication-capable SENTRON circuit breakers for reliable protection and switching of plants and loads
- With the SENTRON switch disconnectors that can be simply and quickly installed for reliably disconnecting/switching plants and loads, either with fuses or without fuses
- With the SENTRON PAC3200 and SENTRON PAC4200 multi-function measuring devices to precisely acquire electrical measured values and energy
- With the innovative power management add-ons SIMATIC PCS 7 powerrate and SIMATIC WinCC powerrate for transparency and to monitor power distribution and costs

www.siemens.com/lowvoltage-power

Conveyor technology references

Integrated drive and automation technology for airport logistics

The challenge

With the continually increasing amount of traffic and new airlines always arriving on the scene, the rapid growth in the aerospace industry places the highest demands on the infrastructure and logistics – and on all of the associated technologies. Major airline hubs typically have a large number of gates, a high passenger volume and a high transfer quota. Whether short or long transfer times – there is a demand for fast and high-performance baggage handling systems with a high capacity and precise sorting capabilities.

Solution

Extending over an area of 9000 square meters, the innovation and testing center in Fürth, Germany, demonstrates how a variety of different individual systems can be combined to create a complete functional concept for ultra-modern international airports. Our integrated drive systems ensure reliable baggage handling. After a piece of luggage has been checked in and a corresponding barcode has been attached, it is transported on an RFID-supported conveyor belt system to the HBS system (Hold Baggage Screening). The baggage is screened there according to the specified safety regulations and is then forwarded on using a tray conveyor system. The trays allow baggage to be moved without subjecting it to excessive wear at especially high speeds of up to 10 m/s.

The baggage is then routed to the aircraft loading station via the sorter and slides. All of this means that the baggage handling system places high demands on the drives. To comply with these high demands, our high-performance drive solutions combine low noise, high-torque Siemens/Flender geared motors with the matching converters – and intelligent motor starters that handle

3000 starts/h. The motors are linked to the central control system of the baggage handling system via AS Interface and PROFIBUS. The conveyor segments only operate when they are actually needed and the drives respond quickly and appropriately to the associated sensor signals. Type-tested switchgear and busbar distributors as well as the integrated communications-capable switching and protective devices feed the necessary power to the drives at the required time. Further, the innovative power management add-on SIMATIC WinCC powerrate in conjunction with the SENTRON PAC3200 and SENTRON PAC4200 multi-function measuring devices ensure transparency and monitor the power distribution costs.

Advantages

The innovation and testing center in Fürth proves how modern airports can be efficiently realized using integrated overall concepts, and how power consumption can be minimized while increasing capacity at the same time. And this is precisely the solution that the major airports need to prepare for handling increasing passenger volume. Whether for products, special system components or for the complete project. When planning and implementing airport equipment, we can leverage our 20 years of experience and competence in this area. There are some good reasons why five of the 10 best airports worldwide are equipped with our baggage handling systems: The No. 1 worldwide – Hong Kong International Airport – as well as airports in Dubai, Munich, Seoul and Sydney. As a comprehensive and innovative partner, we understand what's important – both today and in the future.

Innovation and testing center for airports



Modernizing conveyor technology optimizes truck production at IVECO Magirus in Ulm

The challenge

While modernizing both of their truck assembly lines at their plant in Ulm, Germany, Iveco wanted to upgrade the outdated contactor controls and drive system and bring them up to state-of-the-art technology. Both of these production lines for 14-ton trucks and larger are roughly 500 m long and divided into three sections. The conveyor must be able to run at variable speeds of between 0.5 m/minute and 1.4 m/minute.

Solution

Our helical and bevel helical geared motors with 5100 Nm or 3000 Nm respectively, are operated using MICROMASTER 440 with vector control. These are linked to the SIMATIC S7-400 automation system via PROFIBUS DP. All of the sensor signals are collected at several stations of the distributed SIMATIC ET 200S I/O and also transferred to the control – or to the higher-level SIMATIC WinCC SCADA system. The 56 Emergency Stop switches distributed widely throughout the plant are connected to ASIsafe using safety K45 AS-i I/O modules. The four AS-i lines each extend a distance of approximately 300 meters. This was achieved by using two AS-i repeaters per line. Furthermore, DP/AS-i Links establish the connection to the high-level PROFIBUS.

Advantages

The comprehensive modernization of the drive and control technology resulted in a drastic increase in plant availability – and with it a jump in productivity. In addition to the production area, the benefits especially extend to the maintenance of the assembly line networks. Previously, there were approximately 30 to 40 disturbances registered every day – today, there are only between 5 and 6. And since this low number of incidents is now consistently and automatically logged in the process control system, it is possible to isolate and eliminate any recurring problems.

Comprehensive automation solutions for the Ingolstadt Hospital

The challenge

Serving meals on time to more than 1000 patients – and that three times a day: The logistics at the Ingolstadt hospital has to fulfill some high demands – especially since the solution also needs to reliably supply medicines, sterile utensils, laundry and detergents. In addition, used items and materials must be disposed of, with a strict separation between supply and disposal to prevent any contamination.

Solution

Within the scope of the comprehensive modernization of the automation system, the hospital chose SIMATIC: The core elements in the travel gear chassis and loading carts are now SIMATIC S7-300 controls with CPU 313C. These are combined with MICROMASTER 440 converters as well as two powerful induction motors. Straightforward operator control and monitoring functions for the individual travel gear are provided in the form of a SIMATIC OP3 operator panel. The Moby D RF identification system is used to localize them along the 500 m track. Furthermore, all of the floor controllers exchange information via standardized SIMATIC CP 343-5 communication processors – and through high-speed PROFIBUS communications.

Advantages

The modernization of the automation system has markedly improved the workflow – and ensures that patients, employees and operating companies are satisfied. For instance, when it comes to the used containers, no operator intervention is required. When necessary, the central control program only allows transport from the kitchen, and automatically blocks all other transport activities. This allows meals to be delivered to all of the patients on time without any delay.

IVECO Magirus



Ingolstadt Hospital



Conveyor technology references

Innovative configuration and visualization in glass production at Rexam in Nienburg

The challenge

Rexam Glass Germany produces more than 300,000 tons of glass annually at its Nienburg facility. In continuous production, after coating, glass bottles are transported to buffer sections and tables, which can buffer ongoing production for up to 20 minutes in the event of a disruption. However, Rexam does not want to have to use this option too often. After all, a company's profitability rises and falls with the high availability of its production facilities.

Solution

A crucial element of the comprehensive modernization measures – carried out on six production lines at the cold end – is a conveyor system that is approximately 1000 m long and equipped with 220 converter-based single-motor drives.

This solution was developed by the Miprotek company, based in Northern Germany. It features especially user-friendly operator control based on the test-proof and heat-resistant SIMATIC panel PC 670 with degree of protection IP65. A PLC-based conveyor concept developed by Miprotek ensures smooth operation. A SIMATIC S7-315-2DP control is installed on each line: It sets the speed and individual setpoint values for the various drives, reads out the updated current actual values, monitors limits and compiles important process data. Furthermore, intelligent configuration and visualization software ensures maximum transparency in all of the process steps. This software is based on the Visual Basic scripts that were implemented in ProTool/Pro.

Advantages

While the SIMATIC Panel PC 670 ensures trouble-free visualization, ProTool/Pro makes it far easier to program the installed drives. The drives are largely pre-configured, meaning that the ProTool/Pro user interface was easy to transfer to all six production lines at the cold end. This reduced the engineering costs by approximately 20%.

Rexam Glass



SIMATIC controls logistics and production at Universal Manufacturing & Logistics in Langenleben

The challenge

Universal Manufacturing & Logistics (UML) produces CDs and DVDs in small batches. With a SIMATIC control system in place, these CDs and DVDs can now be delivered to customers in 18 countries from the company's own distribution center within 24 hours. UML itself has a maximum storage capacity of 28 million data carriers (CDs or DVDs). This represents an enormous volume that requires an integrated and reliable automation concept to ensure precise handling.

Solution

After the CDs and DVDs have been produced on more than 22 ultra-modern carousel machines at UML, each disc receives its own unique label with up to six different colors in a screen printer. A SIMATIC S7-300 CPU handles the controls for the screen printing machine as well as the new packaging lines. SIMOVERT MASTERDRIVES converters are used for the drives. Just like the SIMATIC ET 200 I/O modules, these are also connected to the control via PROFIBUS DP. The individual sub-warehouses are automated and linked with one another completely using Siemens technology via SIMATIC, PROFIBUS and AS-Interface.

Advantages

Our solution has provided sustainable value added to UML: Thanks to the maximum transparency when it comes to the production-related and logistical processes, 95% of the catalog items are permanently available – and fast post-production is guaranteed. Thanks to the especially short production times, up to 90,000 order lines can be handled in the distribution environment.

UML



More efficiency in conveyor technology

Totally Integrated Automation

With Totally Integrated Automation (TIA), Siemens is the only manufacturer that can offer an extensive, integrated and unified range of products and systems for all automation tasks and in all sectors. This represents the optimum basis for solutions that are perfectly tailored to specific requirements. Thanks to the unique level of integration of TIA, all of these sub-steps involved in a conveyor technology, across all automation levels, can be perfectly integrated into a complete solution. From the planning through operation up to modernization. Here, the unified approach when further developing our products and systems guarantees the highest degree of security of investment.

Totally Integrated Automation Portal

With its Totally Integrated Automation Portal (TIA Portal), Siemens has redefined engineering. The TIA Portal is by far the most intuitive, efficient and proven engineering framework, enabling you to design all of your automation processes optimally from a single computer screen along the entire value supply chain. From development through installation and commissioning up to maintenance and expanding automation systems, the framework reduces engineering time and costs. The TIA Portal perfectly supports STEP 7, WinCC and StartDrive.

Safety Integrated

Safety Integrated is the consequential implementation of safety technology in the sense of Totally Integrated Automation: On one hand, within the scope SAFETY Integrated, safety-related functions are directly integrated into standard Siemens products, on the other hand, safety technology can be integrated into the standard automation in a unified and user-friendly way.

As a consequence, Safety Integrated ensures a wealth of advantages – especially from the economic perspective. For instance, thanks to the significantly simplified engineering, safe and productive machines and plants can be implemented considerably faster – and easily adapted to new requirements. This unified overall system of safety technology and standard automation also has a positive impact on plant and system operation: More efficient diagnostic functions reduce the danger of potential downtimes and increase the overall availability.

Totally Integrated Power

Totally Integrated Power stands for integrated and unified solutions for power distribution in industry and commercial buildings. From medium voltage down to the socket outlet. For cost-effective energy concepts.



Service without limits

Whether shipping your drive precisely as ordered, delivery, installation and mounting, commissioning or maintenance: Our experts are always there for you. Locally – and in over 130 countries around the world. This means that you profit from short delivery times: You receive each and every component as quickly as possible thanks to optimized logistics and production processes.

By the way, you can also easily order products and components through the Internet.

You will find all of our products listed in a clear structure under www.siemens.com/automation/mall. And in fact, using EDIFACT you can even administer your order online.

Further, we are also there for you personally. Whether you require support from our service specialists, you wish to order spare parts or you simply have a question: you always obtain the best possible support through our hotline.

Additional information:

www.siemens.com/conveyor-technology

Contacts in your area:

www.siemens.com/automation/partner

You will find additional information, brochures and technical descriptions on our Internet pages under the navigation point Support.

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