Logistics and material handling solutions

Achieve business excellence with smart, future-ready material handling solutions.

schneider-electric.us/materialhandling

Fundamentally change how your material handling system operates with expertise and global reach from a trusted partner!

Your challenges

Urbanization, connectivity everywhere, e-commerce, and mass personalization are reshaping the landscape in manufacturing and logistics material handling equipment and systems.

The supply chain for manufacturers and distributors is facing challenges from increased analytics, multichannel fulfillment, talent shortages, and the use of new technologies such as wireless, mobile, and machine-to-machine. At the same time, there is continued focus on cost reduction and sustainability.

Our solution

To manage in this challenging environment, you need a trusted resource — a true partner — to help you increase your overall operating efficiency with comprehensive solutions customized for your system or entire facility. The specialists at Schneider Electric have extensive experience and intimate knowledge of the logistics value chain. This expertise, combined with the unmatched breadth of our offer and global reach, makes us a trusted partner for many in the logistics industry. Our relationship with you is not just about selling world-class power, control, and automation solutions — it's about working with the people in your organization to fundamentally change how your material handling system operates from a machine, personnel, and business perspective. It's about sustainable solutions that allow you to proactively monitor, measure, manage, and maintain equipment to minimize downtime, reduce energy consumption, and increase productivity. Schneider Electric is helping companies like yours maximize operational efficiency in a challenging and demanding environment — you should expect nothing less from a committed partner.

Eco Struxure™
Innovation At Every Level

With solutions from Schneider Electric you can:

- Build logistics and material handling facilities faster and at lower overall cost using EcoStruxure™ integrated architecture.
- Achieve greater flexibility in response to the evolving needs of your market and customers.
- Face lower overall risk with an integrated solution that is easier and more flexible for OEMs and system integrators to incorporate in their designs.

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Inside Schneider Electric

Intelligent building solutions

Our innovative building management, power management systems, and small building control products provide a strong foundation for intelligent buildings that inspire occupant productivity and deliver optimal energy and operational efficiency.

Energy efficiency and management

Energy efficiency and proper energy management are not passing fads. Every day, facility managers and corporate executives are charged with decreasing energy costs and consumption at their facilities. And energy management extends beyond the basics of efficient conveying equipment. It includes everything from forklift batteries to lighting products to software.

Automation and control solutions

You can improve your facility's overall operating efficiency by optimizing your conveying equipment application costs. World-class automation and control products from Schneider Electric can help reduce your time to market and total machine cost. Achieve up to a 50 percent savings in the design and start-up operation costs of your solutions by using simple, validated, safety-compliant, tested, and documented function blocks that enable mechanical modularity, predefined CAD panel designs, and wiring diagrams that minimize design time and improve system consistency. Schneider Electric is ready to leverage the collective knowledge of its industry specialists and more than 100 applications engineers to optimize your machine design.
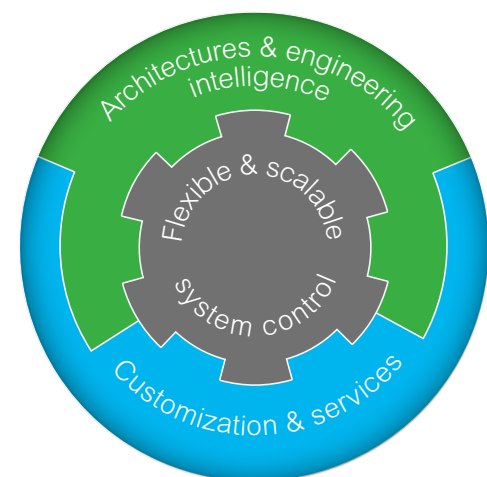
Supervisory Control and Data Acquisition (SCADA)

As a global provider of world-class industrial automation software solutions, Schneider Electric is renowned for the development and application of SCADA and human-machine interface (HMI) offerings. As the world's most acclaimed HMI – used in over a third of the world's industrial and manufacturing plants – Wonderware™ continues to empower users with rapid creation of standardized, reusable visualization applications and one-click deployment across an entire enterprise including mobile users. Our solutions provide a central connection to multiple plant and business systems enabling organizations with critical information to improve their overall business performance. A Wonderware or Citect SCADA system can also enable visualization and control of multiple vendor-disparate systems.

Maintenance and operations

A Wonderware or Citect SCADA system can also enable visualization and control of multiple vendor disparate systems. In addition, a SCADA system adds operational efficiency by enabling monitoring of equipment for all locations through a centralized interface, resulting in increased operator effectiveness. It also decreases maintenance and training costs because fewer maintenance trips are required. The system can easily be integrated with existing SCADA, Historian, and Enterprise Resource Planning systems. The Schneider Electric automation and control equipment is engineered with state-of-the-art remote monitoring functionality for predictive maintenance.

Critical power

Providing protection against some of the leading causes of downtime, data loss, and hardware damage: Power problems and temperature. As a global leader in network-critical physical infrastructure solutions, Schneider Electric sets the standard in the industry for quality, innovation, and support. Our comprehensive solutions, which are designed for both facility and corporate environments, improve the manageability, availability, and performance of sensitive electronic, network, communications, and industrial equipment of all sizes.
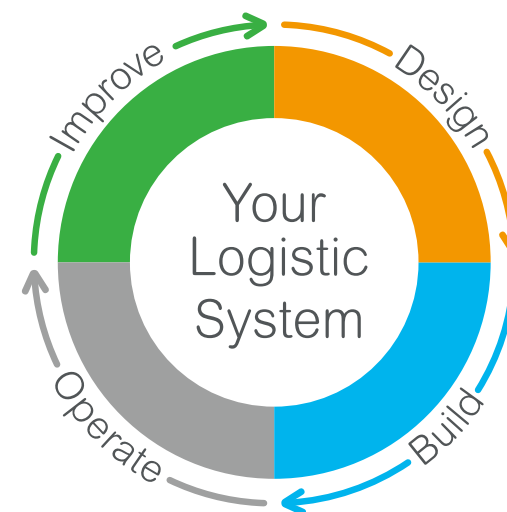
Asset management

Your operating budgets are being slashed and you have fewer funds for personnel and spare parts to maintain your facilities. You're an exceptional logistics company — do you really want to be in the business of maintaining your assets, or would you rather leave that to someone who focuses on asset management? Schneider Electric specializes in complete coverage of your automation and control equipment and systems, including 24/7 emergency dispatch, equipment repairs on over 120,000 products from more than 2,500 manufacturers, and an equipment life planning process that prolongs the life of installed automation equipment and helps you plan for future upgrades or changes. A Schneider Electric Consultancy Team can also prepare an in-depth, on-site, one- to three-year action plan of your installed base and support skills inventory to help you plan for the most cost-effective life of your current, critical assets.

Video, security, and safety

Schneider Electric offers Pelco™ security, a world leader in the design, development, and manufacturing of video and security systems and equipment ideal for any industry. Protect your people, property, and data with the global leader in security solutions. Schneider Electric provides integrated security systems that help you reduce risk, comply with security regulations, and protect your bottom line. An integrated system helps reduce installation, training, maintenance, and manned guarding costs, while giving you a single-seat view of all your systems.

Architectures & engineering intelligence

Flexible & scalable

system control

Customization & services

Improve
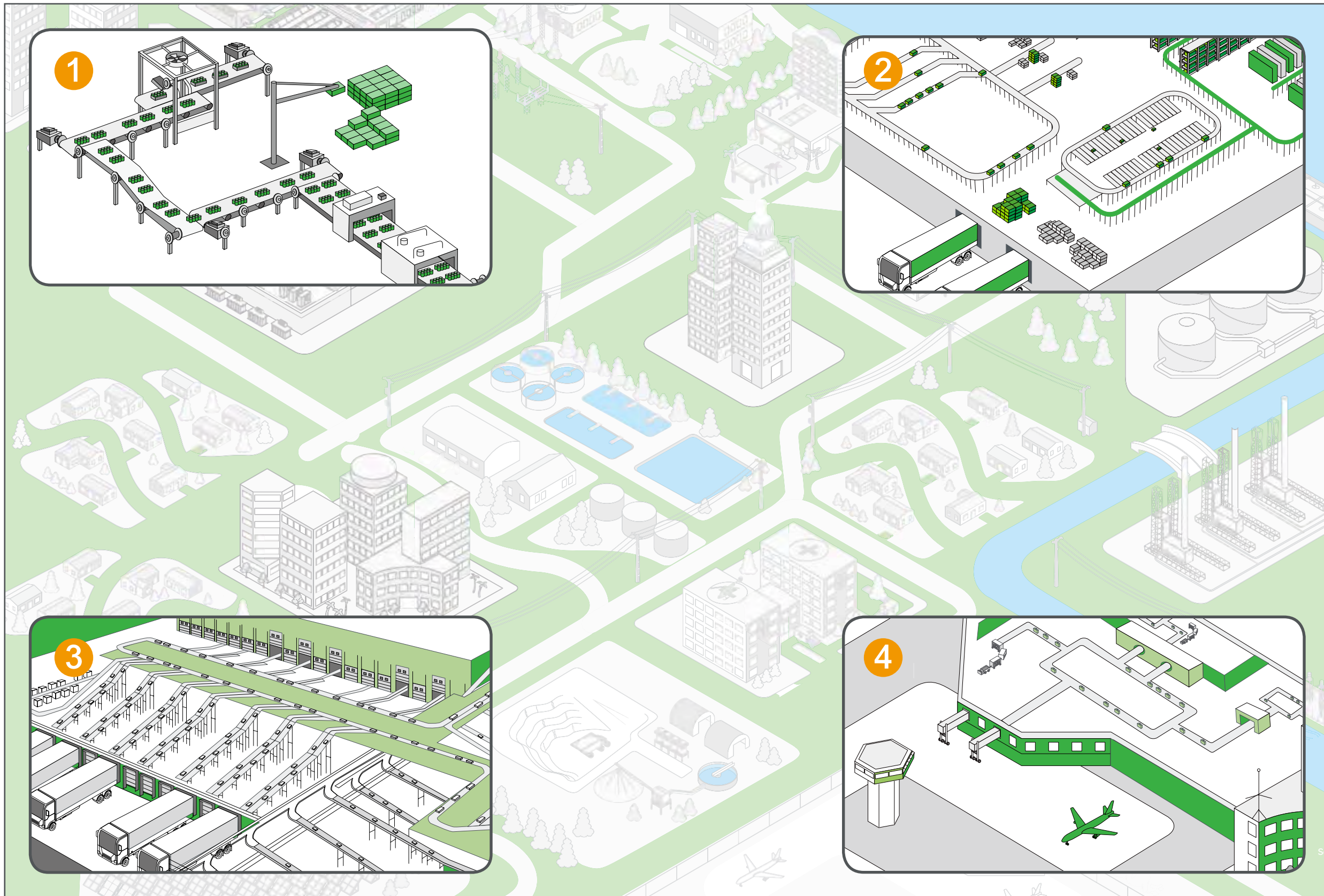
Design

Build

Operate

Your Logistic System

Building your solution

Schneider Electric has a long history of developing best-in-class solutions for the material handling equipment industry — we work with end users in manufacturing, distribution, parcel/post delivery, and airport baggage systems to supply complete facility and automation end-to-end solutions.

At the same time whether an OEM, system integrator, or controls designer, we build and support a team to provide scalable alternatives for intelligent, energy-efficient, and cost-effective material handling applications.

Industries

1 Manufacturing

2 Logistics

3 Parcel/post

4 Baggage handling

Material handling in industrial manufacturing

Conveying systems are an integral part of any production facility.

Whether you are in a redesign cycle or creating a new production line, our tested solutions provide the building blocks for your material handling system. Whether you are designing a pallet conveyor or unit accumulation system, our conveyance "automation foundation" provides a cost-saving base architecture utilizing plug-and-play industry standard components.

Schneider Electric responds with simple "just enough" engineering solutions for conveyance and automated conveying system equipment that provide the control underpinnings for common mechanical applications, such as accumulation, transfer stations, turn table, and divert systems.

Customer challenge: Cost-effective, high-performance conveyor drives

A manufacturer with automated conveying systems wanted to update its systems with new controls to increase performance. The systems integrator suggested adding integrated controls and high-performance AC drives for multiple conveyor sections.

The Schneider Electric solution

Working with the systems integrator, we provided Altivar™ Machine variable speed drives that allowed the conveyors to perform better with less downtime and lower total machine costs thanks to:

- Enhanced motor control performance by reducing application task cycle time (1 ms) in synchronous, asynchronous, servo, and reluctance motors. Altivar Machine drives allow open-loop control of speed and torque, or closed-loop control of speed, torque, and position.
- Advanced connectivity with drives that support a variety of communication protocols such as Modbus TCP, Ethernet IP, CANopen®, Sercos III, and many more.
- Simplified installation requiring less design time. Altivar Machine variable speed drives conform to modular design standards that allow for easy selection, fast commissioning, and reduced installation time.
- Enhanced safety. Embedded safety functions from STO and SIL3 PLe up to the most demanding functions.
- The Schneider Electric engineering and design team, working with the customer and systems integrator, facilitated the development of the program and provided training for the Conveyor OEM and end user.

Altivar 320 drive
Available in two form factors, compact and book, for efficient space usage in various cabinet layouts despite mechanical constraints.

Wonderware
InTouch

Vijeo™ Citect

Material handling in warehousing/ distribution/logistics

Logistics and material handling professionals are faced with a myriad of challenges. Operations managers are under pressure to move more product for less money and close the gap between operating targets and theoretical capacity. A lack of analytical tools with real-time and historical data makes it difficult to achieve 100 percent visibility of all operations all the time. Running an energy-efficient distribution center is becoming a requirement instead of an aspiration. Limited capital budgets not only mean no new facilities, but also fewer personnel and spare parts to maintain existing facilities

Customer challenge: Improve distribution center sustainability and efficiency

A large national retailer was looking to maximize its distribution center output, reduce material handling equipment system downtime, increase store service, and achieve energy savings in the process.

With an installed base of material handling equipment from various vendors with independent proprietary software systems, the customer had no means of monitoring operations and no means of reporting on the total distribution center's performance.

The Schneider Electric solution

Schneider Electric had the resources and expertise to review the installed base of the material handling equipment and set up electrical hardware and software configuration standards.

The monitoring solution was built around powerful Wonderware InTouch® software, which provided an easy-to-understand, intuitive overall view for monitoring all material handling operations. InTouch goes beyond simplistic graphics to enable application builders to focus on creating meaningful content that will drive enterprisewide operational productivity and cost savings.

Our solution architects were able to assist in programming all systems with operational efficiency logic. By creating standardized interfaces among the automation vendors we reduced the installation and commissioning cost. Now with one software tool the customer can quickly see all issues, and justify and prioritize opportunities for improvement. The solution enables interactive reporting tools to facilitate continuous improvements and energy savings.

Material handling in airport baggage systems

Customer challenge: Ethernet-based baggage handling control system brings high speed, lower cost

An international airport needed to replace an aging terminal. The $1.1 billion "Big Build" airport modernization project was three times the size of the original and consisted of a three-story central passenger terminal and a separate 19-gate concourse with an elevated people mover to move passengers between the terminal and concourse areas. In addition, the project would include the country's first IT-based controls for a baggage handling system.

The Schneider Electric solution

Schneider Electric partnered with a large global OEM known for its ability to provide innovative material handling systems that address the business challenges of its clients. In the baggage handling industry, the need for high-speed data handling has become a paramount challenge as secure tracking of passenger assets grows. The OEM, along with Schneider Electric, believed it could offer a decentralized, Ethernet-based architecture that would be faster than traditional proprietary systems, and reduce overall maintenance and variable costs, such as start-up and commissioning time, while still maintaining performance and reliability.

Since this was a first-of-its-kind solution, Schneider Electric had to first spend six to eight months developing the solution and demonstrating a proof of concept before becoming an approved vendor for the consultant's specification. Schneider Electric utilized its network specialists in the company's North Andover Networks/Communications/Automation Support headquarters to configure the best solution.

The end result consisted of the Quantum™ PLC with hot standby, Connexium™ Ethernet switches, Altivar 312 drives, TeSys™ U Line starters, and Magelis™ XBTGT HMI touch screens. The hardware is programmed with Unity™ software. A key Schneider Electric channel partner assisted with the project from the beginning offering technical, design, and testing support and project coordination.

Programming the solution to handle all of this data took significant effort. Schneider Electric network specialists helped the OEM's engineers optimize the code to make the best use of the hot standby system. Despite the airport's aggressive schedule, the Ethernet-based baggage handling system was installed efficiently and is performing to specification.

Altivar 340
Designed for high-performance applications

Material handling in parcel/post delivery systems

Customer challenge: Parcel automation with increased velocity

One of the world's largest material handling logistics providers was building a large fully automated package handling system. It needed a turnkey power, automation, and controls vendor who could supply a system that could manage the 1 million packages a day that would flow through the facility. With 4 million square feet under the roof, the distribution center would be bigger than the Pentagon, with a power draw in the neighborhood of 75 megawatts or enough to power 75,000 homes.

The Schneider Electric solution

As the sole supplier able to provide all the products and services needed for this mammoth project, the customer relied on Schneider Electric's expertise in managing large power and automation projects.

The system required approximately 1,000 PLCs and 20,000 variable frequency drives, all controlled through an extensive Modbus TCP/IP Ethernet backbone.

Application engineering and project management personnel were stationed on site to provide help with startup and troubleshooting. We also designed special sensors to transmit process information from the drives to the PLCs controlling the automated system. The result: A flawless performance that came in on time and on budget.

Modicon: Future-ready PLCs and PACs

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Choose your solution

Schneider Electric has a comprehensive and intelligent solution offer for the material handling equipment industry — we strive to provide scalable alternatives for intelligent and energy-efficient material handling applications.

Altivar™ Machine drives

Altivar Machine variable speed drives allow your material handling systems to perform better with less downtime and lower total machine costs.

- Support a variety of communication protocols such as Modbus TCP, Ethernet IP, CANopen, Sercos III, etc.
- Conform to modular design standards that allow for easy selection, fast commissioning, and reduced installation time
- Available in both compact and book form factors that allow efficient space usage in various cabinet layouts
- Embedded safety functions from STO and SIL3 PLe up to the most demanding functions
- Compatible with synchronous and servo motors

Lexium™ motion control

Motion controllers, drives, motors, and linear motion axes — a complete range of motion products and solutions.

- Logic and motion programming in a single, fully IEC 1131-compliant environment dramatically reduces programming time and complexity
- All controllers provide a full set of PLCopen function blocks for the entire motion range
- Powerful and cost-effective solution for synchronization of multiple axes
- Extended motion functions, such as Virtual Axis, CAM Profiles, Electronic Gear, interpolation, and fast response inputs and outputs

Altistart™ soft starters

The Schneider Electric soft starts offer provides longer life and ensures smooth acceleration of conveyors.

- Wide range of soft start solutions — patented torque control system to manage soft start and dynamic breaking
- Integrated bypass contactor for compact design, reduced wiring time, low heat dissipation
- Cascaded starting and deceleration of a number of motors, open communication protocols for ease of integration

TeSys™ Square D motor control

The Schneider Electric NEMA and IEC motor control offer provides robust performance and enhanced reliability.

- NEMA solutions rated for challenging application with robust performance, an industry standard
- IEC solutions that enhance motor management and reduce panel space
- A universal offer, found in all types of material handling equipment
- TeSys T, a complete motor management solution

Preventa™ machine safety

Schneider Electric Preventa range enhances safety throughout an equipment's entire life cycle from design, manufacture, installation, adjustment, operation, and servicing right through to decommissioning.

- Safety interlock devices used as part of safeguarding systems to control access under specific conditions of reduced risk
- Light curtains to detect approach to dangerous and limited areas
- Emergency stop buttons and cable pull switches for emergency shutdown
- Safety relay modules with specific safety functions — to monitor input signals from safety-related devices, and to interface with contactors and drives — by switching off output safety contacts
- Safety controller: Configurable safety device capable of centralizing a range of safety monitoring functions
- Safety PLCs: Programmable electronic systems to carry out safety- or nonsafety-related tasks for machinery and equipment

Square D circuit breakers

From circuit breakers to ground fault protection, our comprehensive motor protection/circuit protection offer is tested to the highest standards.

- Wide variety of both molded case and miniature circuit breakers to provide protection for your pump systems when your motor exceeds its current limitations
- Provides preferable solution for material handling equipment systems protection from short-circuit and overload conditions
- Used across all applications, based on code and system design standards

Modicon™ process automation

Modicon M340 PAC

For small to medium process automation.

- Open standards Modbus, CANopen, Modbus TCP, and Ethernet/IP
- Wide selection of discrete, analog, serial, and communication X80 modules
- Hardened hardware ratings for shock, vibration, and temperature

Modicon M580 ePAC

For medium to large process automation.

- Ethernet backplane offering 10x communication speed
- Cybersecurity ready with Achilles Level 2 certification
- Advanced functions with high availability services (CCOTF, Hot standby, redundant power supplies)
- Deterministic Ethernet communication with up to 1 ms I/O time-stamping resolution

Modicon discrete automation

Modicon M221 PLC

For small to medium automated machines.

Available in two controller formats: Conventional and Book.

Modicon M241 and M251 PLCs

For advanced machine automation incorporating speed and position control functions.

Modicon M251 is well-suited to control multiple machines leveraging dual channel communications. Embedded functions minimize the machine cost:

- Ethernet with embedded web server function, CANopen, Serial, and USB programming port
- Eight high-speed counter inputs and pulse train output for motion control

PacDrive™ 3 is the future of high-performance material handling automation

PacDrive is the ideal solution for controlling large material handling systems and robotics, using fully integrated, IEC 6113-3-compliant program structures. PacDrive 3 unifies logic controller and motion control functionalities on a single hardware platform designed to reduce complexity.

- High performance solution for decentralized material handling system with integrated safety
- Fully integrated Ethernet-based communication using SERCOS III
- One programming tool, one program for the complete machine
- Open system, supporting other field busses as well as TCP/IP communication

Magelis™ HMI

Schneider Electric is the world leader in bright, easy-to-read HMIs.

- Easy to install/set up
- NEMA 4x touch screens that can be used in wash down environments
- Withstands high temperatures (50 °C)
- Brilliant, high-visibility display
- Communication options for all major network protocols
- Integrated HMI/PLC to reduce panel space
- Easy-to-install version mounts similar to a push button — using the same 22 mm hole punch

Harmony™ control and signaling

The Schneider Electric operator device interface offer provides the right information at the right time.

- Complete line of operators — including new LED-indicating devices that increase visibility, prolong life, and reduce costs
- Installation made easy with wireless pushbuttons — Harmony XB5R: The art of simplicity
- No wire and no battery: A simple and new way to install and use pushbuttons
- Easy and fast installation/maintenance-free/robust design for industrial environments

Telemecanique™ sensors and switches

Schneider Electric is a trusted specialist providing reliable Telemecanique™ sensing solutions offering a catalog of over 100,000 products, including electronic and mechanical sensors, vision sensors, pick-to-light systems, safety products, and I/O products.

- OsiSense™ XUY photoelectric roller sensors for simple integration into your conveyor systems
- OsiSense XCKW enables wireless machine communication to give mobile machines more freedom of movement
- OsiSense XUPK, simple and innovative picking sensor, improves productivity on your material handling lines

Relays, terminal block, and power supplies

Schneider Electric relays, timers, terminal blocks, and power supplies are designed and manufactured to provide reliability and performance.

- Extensive offer of complementary components to allow complete control system design — allows you to consolidate vendor relationships
- Used to integrate logic, control circuitry, and connectivity, and provide appropriate control power in control systems
- Found in all material handling systems across all end markets

Engineering solutions

Take advantage of a full range of technical and support solutions for your specific needs.

Solutions engineering — Dedicated support for your success

Providing expert project management skills to you and your company is one of Schneider Electric's greatest values. We're committed to our mission of giving you a leg up on the competition and saving you time and money by utilizing our comprehensive project management services to ensure your project's successful execution. We are your solution partner throughout the entire project life cycle, providing a single point of contact while developing and managing customized solutions and delivering clear communication and project reporting.

Testing and project management

Schneider Electric provides prototyping and testing capabilities to make sure your solutions function the way you believe they should. We also offer complete project management services to ensure we effectively cover all phases of development projects in a timely manner that meets your deadlines.

Solutions testing and training center

Learn how to simply and easily build and commission flexible machines that reduce costs and time to market — all by the time you complete training. Basic and advanced training classes, hands-on testing, and demonstrations offered through our engineering resources will give you the opportunity to learn about universal, industry segment-specific, and end-to-end solutions. On-demand training, which we schedule at your request, will allow you to customize a solution for your specific machine and application needs.

Product repair and replacement

The repair services team at Schneider Electric is dedicated to keeping your business running smoothly and productively. We're here to help, with a one-stop shop for all of your repairs, which can fix and/or replace malfunctioning equipment, as well as give you insight into the root cause of the error. We can also help you manage your spare parts inventory to minimize the downtime of critical operations.

Custom engineered control panel solutions

Panel solutions provide original equipment design and manufacturing process services, applications, and solutions to customers whose needs go beyond products. We create value through engineered solutions, applications consulting, specialized enclosure manufacturing, and turnkey motor control machine solutions.

Focus is on OEM machine builders building for the industrial end user.

The custom engineered solutions team is a technical organization able to provide solutions to our customers with:

Products	Software
• Kits • Programmed delivery • From third parties • Adaptation in panel	• SoMachine™ • Unity™ • AFBs • Application software • Downloads

Documents	Services
• One contract • One reference • User guides • CAD • Test certificates	• Order management • Engineering • Spare parts • Repair • Support and services • Training

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Meeting your needs across the entire logistics value chain

Schneider Electric is a world leader in logistics and material handling solutions. As a global leader, Schneider Electric has the resources and expertise to support the material handling equipment needs across your entire logistics value chain, including OEMs, system integrators, distributors, and more. We help you navigate the value chain by mitigating risks, lowering costs of ownership through adoption of new technologies, flattening the learning curve, and extending our solutions in your business. The breadth of our offer is unmatched and allows us to provide solutions to global leaders in retail, logistics, and distribution. In addition, with operations in 102 countries and 13,000 sales outlets and manufacturers, our customers can contact us worldwide. Our commitment to you assures local support from a Schneider Electric representative near you.
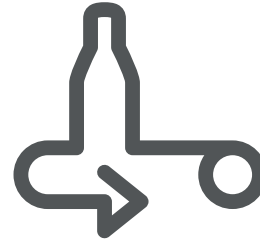
Worldwide support for a global industry

We offer our customers local support and product availability in more than 130 countries around the world. With more than 120,000 employees worldwide, we are ready to assist you as your logistics partner, anywhere, at any time.

Put our experience to work for you

Contact your local Schneider Electric representative to learn more about our logistics and material handling solutions.

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