

Unlocking the potential of industrial robotics

How machine builders (OEMs) and integrators
drive efficiency in a future world of robots

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The rise of industrial robots



The rise of industrial robots

Growing demand for smart machines, including smart robots, is driven by the desire to increase productivity and quality, customize on-demand production, increase cost savings, and reduce time-to-market.

Industrial robots play a key role in the future of smart manufacturing and smart factories. Machine builders (OEMs) can create additional value by equipping machines with automation and digitization, enabling both machines and robots to be more connected and data-driven.

Getting there requires using emerging technologies such as artificial intelligence (AI), machine learning (ML), and robotics to help your end customers migrate more quickly to smart factories.

Industrial robotics is not new. What is new is the emergence of collaborative robots (cobots) and a level of Industry 4.0 agility and connectivity that eases programming and integration at a more affordable price. **See Figure 1.**

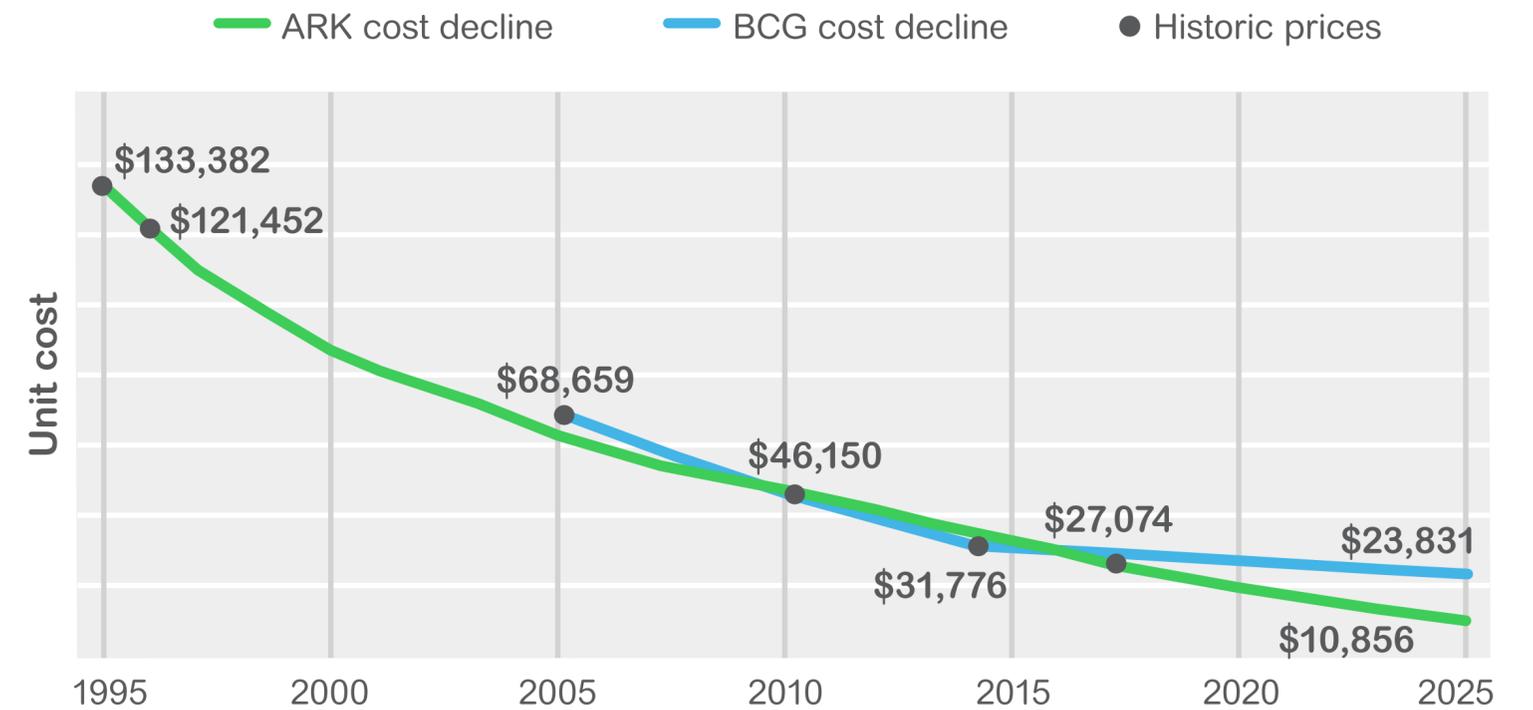
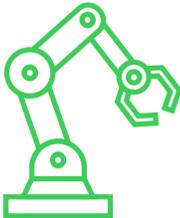


Figure 1: Industrial robot cost decline

Source: [ARK Invest](#)

While industrial robot costs are decreasing, a practical approach to understanding the full value is evaluating their total cost of ownership (TCO)—savings in operator wages, maintenance, and energy consumption.



3.5M

working industrial robots in global factories

Source: [IFR - World Robotics Report 2022](#)

Six trends driving robot and cobot growth

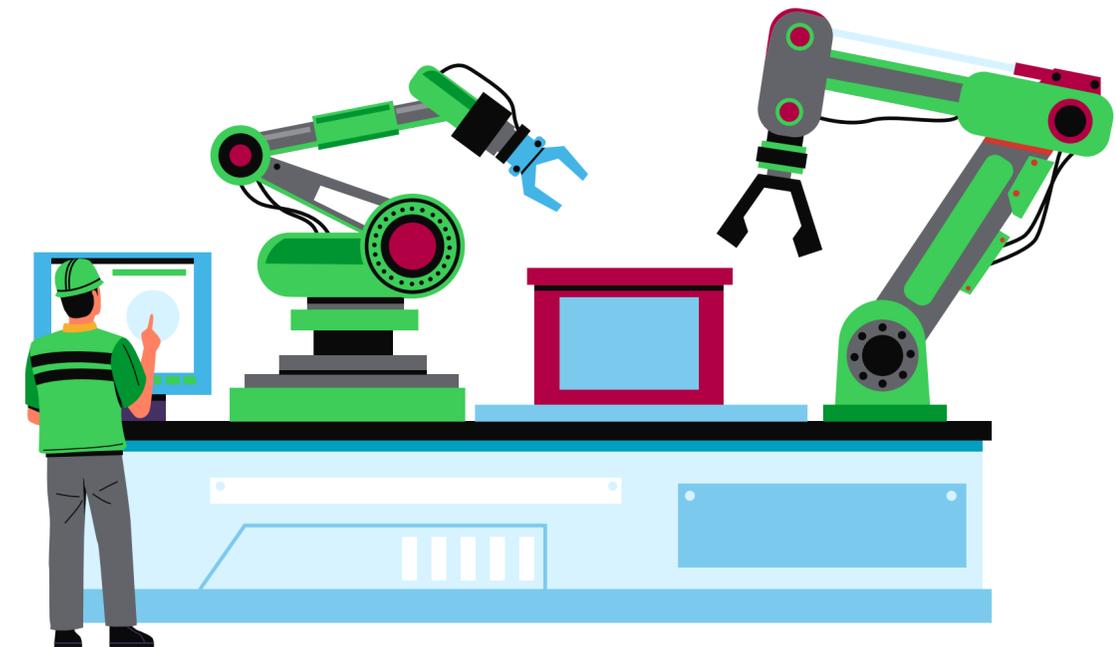
1

Robotic drive efficiencies – Robots impact several operational areas:

- ✔ **Manufacture higher volumes** of quality goods over shorter periods while operating 24/7 without fatigue.
- ✔ **Produce consistent output** with little variability over a given production batch.
- ✔ **Designed to handle repetitive and tedious tasks** and are not prone to errors or distractions, maintaining high quality and Overall Equipment Effectiveness (OEE).
- ✔ **Improve workplace safety and health** by performing well in harsh environments and handling riskier operator tasks involving heavy weights to reduce accidents and injuries.

2

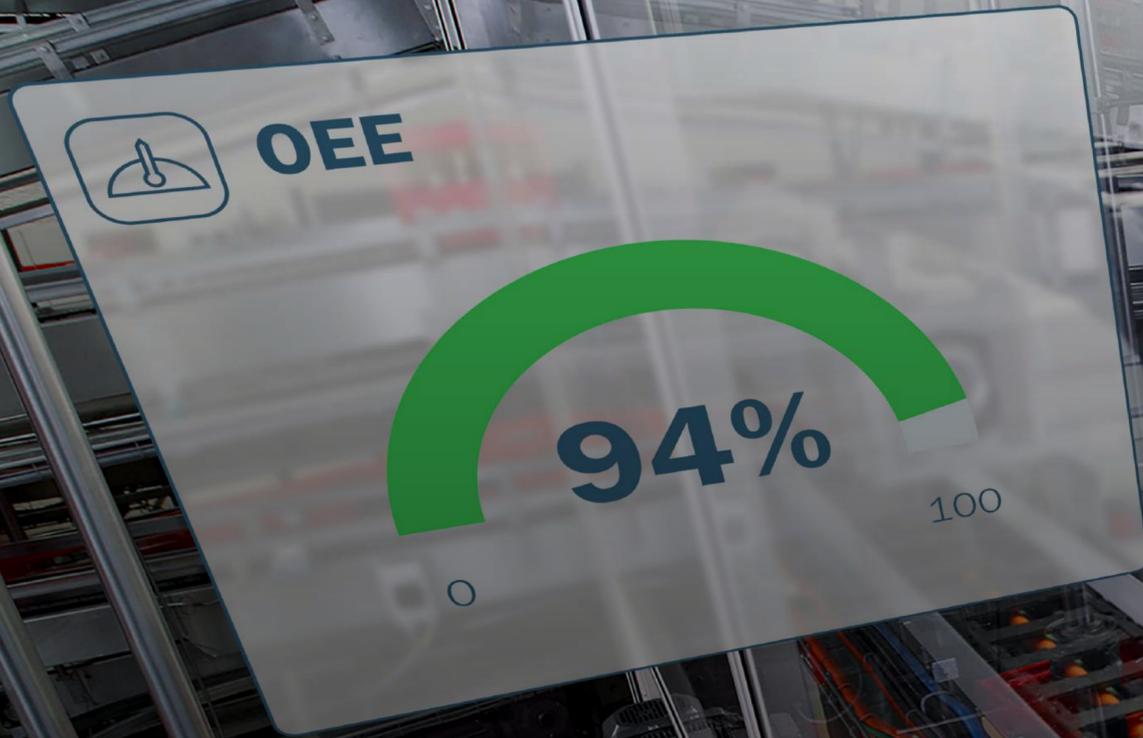
Labor shortages – The obstacle of insufficient operator staff to meet business demands can be augmented with robotics. This can also help solve automation challenges while offering existing workers the prospect of learning new skills and transitioning from repetitive manual work to more supervisory roles.



Six trends driving robot and cobot growth (cont.)

- 3 Global pandemic** – Supply chain disruptions, workplace isolation restrictions, and a renewed focus on resilience have accelerated businesses' adoption of robotic technologies. Regardless of on-site plant workers, some robotics operations can continue to function with remote management and guidance.
- 4 Digitization and Industry 4.0** – Breakthroughs in software-driven digitization enhance speed, flexibility, and operations quality. Mass customization is achievable while reducing costs and time-to-market. Advancements like AI, ML, the internet of things (IoT), digital twin, and big data are now more tightly integrated with robots.

As manufacturers transition from Industry 4.0 to 5.0, human-centric solutions cobots will become the norm to reach new levels of efficiency and enable more personalized autonomous manufacturing through enterprise social networks.
- 5 Lower cost and increased ease of use** – Robotic systems are becoming more affordable with ease of use driving interest in cobots. Now, anyone can use a mobile phone or tablet interface to program a cobot, greatly simplifying human-robot interactions.
- 6 Ease of integration and interoperability** – From an engineering perspective, advancements in computing power, open software development techniques, and networking technologies have allowed faster assembly, installation, integration, and maintenance of robots. A centralized architecture with one programming platform using open standards makes it much easier for automation systems, machines, and robots to work together. The introduction of cobots also extends that connectivity to operators directly interfacing with the robots.



Benefits of robotics

Economic, human, and environmental factors

As interest in robots and cobots continues to accelerate, machine builders (OEMs) and integrators can position themselves to meet the demand with forward-thinking solutions that account for end-user requirements. Those requirements generally fall into three broad categories: economic, social, and environmental – the three pillars of sustainability.

Economic growth

Environmental awareness

Worker productivity

Manufacturers across essential industries like Semiconductors, Logistics, and Consumer Packaged Goods recognize that integrating machines with robots and cobots results in faster cycle times, higher yields, reduced work-in-progress, greater flexibility, and lower costs.

For example, across many sites, end-of-the-line products are still hand-packed. This manual approach is inefficient for both labor costs and throughput. In some instances, these organizations could not output more products even if they had more workers, with footprint restrictions limiting their ability to expand. Robotic solutions address this challenge by enabling faster production in a limited space without adding more people.



Discover how Sewtec Automation maximized its production efficiency with automation and robotics solutions from Schneider Electric.

Economic, human, and environmental factors (cont.)

As interest in robots and cobots continues to accelerate, machine builders (OEMs) and integrators can position themselves to meet the demand with forward-thinking solutions that account for end-user requirements. Those requirements generally fall into three broad categories: economic, social, and environmental – the three pillars of sustainability.

Economic growth

Environmental awareness

Worker productivity

Robot/machine hybrid solutions can offer a more sustainable approach to production. They can be designed as eco-efficient and agile, reducing raw material waste and energy use over an entire lifecycle, further creating a competitive advantage.

Improving industrial production and efficiency with advanced automation and robots—or what we now call Fourth Industrial Revolution technologies—creates smarter operations and stronger business outcomes and could help preserve the planet.

[Learn more](#)

Economic, human, and environmental factors (cont.)

As interest in robots and cobots continues to accelerate, machine builders (OEMs) and integrators can position themselves to meet the demand with forward-thinking solutions that account for end-user requirements. Those requirements generally fall into three broad categories: economic, social, and environmental – the three pillars of sustainability.

Economic growth

Environmental awareness

Worker productivity

Manufacturers must consider human factors when introducing robotics. Robots are designed to relieve physically demanding, monotonous, and repetitive tasks, such as press feeding and machine tending. They also minimize workplace injuries and discomfort concerns and limit human exposure to hazardous operations and harsh working environments. Human operators can instead devote more time to tasks that add higher business value, using real-time data-driven feedback to optimize efficiency across deeply integrated operations.

[Learn more](#)



Key applications

Typical industrial robotics applications

In many manufacturing processes, industrial robots are indispensable in applications that require high endurance and volume, speed, and precision. Some typical machinery applications of robots include:

Packaging

Assembly Machinery

Material Working

Conveying Equipment & Machinery

As an important part of the packaging manufacturing process, industrial robots will help to achieve the strong emerging demand for sustainable and recyclable packaging. Robots are especially useful for automated tasks in packaging applications (e.g., load and unload, palletizing/depalletizing).

Advantages: Production speed and consistency, workers can refocus on added-value tasks.



Discover how Livetech builds efficient and sustainable packaging systems with up to 50% faster changeover times and up to 30 to 40% cost savings.

Typical industrial robotics applications (cont.)

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Packaging

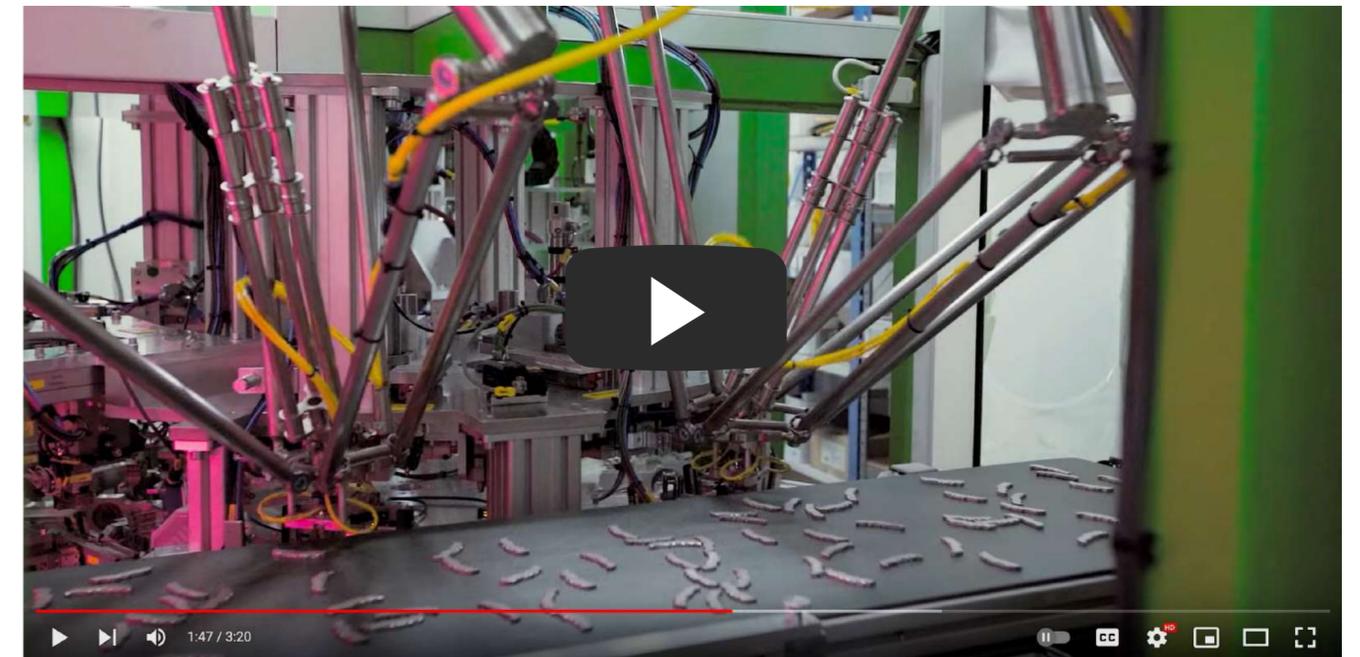
Assembly Machinery

Material Working

Conveying Equipment & Machinery

Robots assemble quickly and accurately, converting small parts into larger units and eliminating tedious tasks.

Advantages: Greater overall flexibility, shorter product lifecycles, higher throughput and quality, and reduced floor space.



Discover how Krofian CZ built its fully automatic assembly machine by using EcoStruxure solutions, based on motion controllers and Delta Robots for pick-and-place.

Typical industrial robotics applications (cont.)

In many manufacturing processes, industrial robots are indispensable in applications that require high endurance and volume, speed, and precision. Some typical machinery applications of robots include:

Packaging

Assembly Machinery

Material Working

Conveying Equipment & Machinery

Applications range from simple bending machines or presses to multi-axis material working machines. Industrial robots are ideal in this industry due to their high precision and efficiency.

Advantages: High precision, reduced human error, and increased safety.



Typical industrial robotics applications (cont.)

In many manufacturing processes, industrial robots are indispensable in applications that require high endurance and volume, speed, and precision. Some typical machinery applications of robots include:

Packaging

Assembly Machinery

Material Working

Conveying Equipment & Machinery

Complete solutions far beyond basic technologies, from logic, motion, and drive controllers to cartesian, and delta picker solutions.

Examples include moving, packing, and selecting goods and transferring parts from one piece of equipment to another.

Advantages: Reduced labor and faster output speed.



Discover how the partnership between MHS and Schneider Electric has resulted in a highly accurate and efficient solution for singulating items from bulk flow.

Top industries utilizing robotics

Robots are present across many industries and play a critical role in several end-use sectors. Schneider Electric has demonstrated expertise in a broad range of machinery applications and end-user segments:



Food & Beverage

In this segment, robotics is about offering a versatile and flexible solution. Robotic parts must be designed in adherence to unique hygienic requirements.

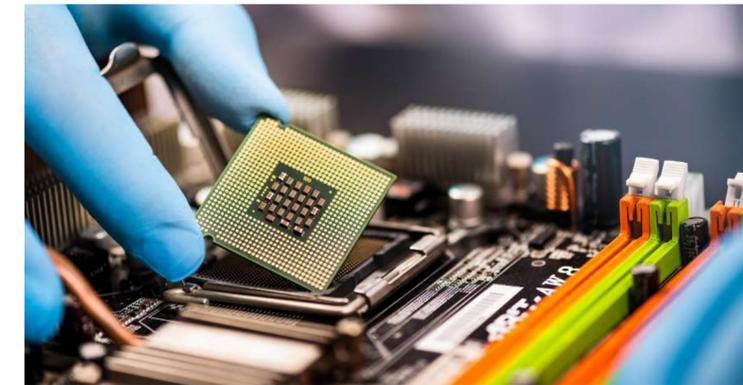
[Learn more](#)



Life Sciences

With rising demand for new drugs, robotics support laboratory and life science industry processes through increased efficiencies, improved throughput times, and reduced costs.

[Learn more](#)



Semiconductor

With growing demand, supply shortages, and increasing global reshoring, electronic device and semiconductor labs run continuously. Robotics help provide high-precision assembly, flexibility, reliability, and consistency, to address marketplace challenges. They further help mitigate labor shortages, drive cost reductions, and boost production efficiency.

[Learn more](#)

Top industries utilizing robotics (cont.)

Robots are present across many industries and play a critical role in several end-use sectors. Schneider Electric has demonstrated expertise in a broad range of machinery applications and end-user segments:



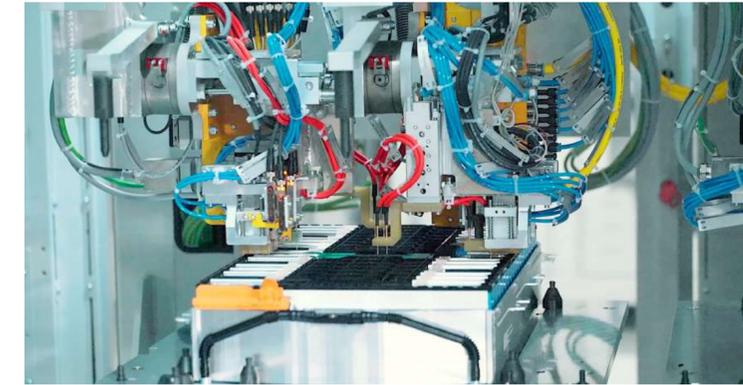
Automotive

As automobile production complexity increases, so is the need for incorporating industrial robots, especially to support painting and welding processes. Cobots are key to addressing labor shortages and creating a safer and more productive workplace.

[Learn more](#)

Logistics and warehousing

Trends such as eCommerce, motion control robotics, and digital transformation are accelerating the pace of product deliveries. This pattern of high-efficiency logistics is now being replicated across most regions of the globe.

[Learn more](#)

EV battery

The rapidly expanding electric vehicle (EV) market requires high-precision of batteries, a key application for robotics. Strong supply chains and robotics are critical success factors for battery cell production and recycling. Robotics help reduce costs, increase capacity in real-time, and boost productivity.

[Learn more](#)

Smart integrated robotics solutions

Robotics and beyond: Your digital partner for sustainability and efficiency

Robotics deployments must be coupled with digitization and advanced automation to help solve manufacturer production, flexibility, and sustainability challenges. That's why Schneider Electric goes beyond robots to provide fully integrated robotic systems – digitally designed from concept to operation and maintenance.

From single-axis machines to high-performance multi-axis machines, our comprehensive [Lexium robots](#), associated with dynamic [servo drives technology](#), enable high-speed motion and precise positioning.

Integrating robots into the machine control solution through [EcoStruxure™](#) our IoT-enabled, open, and interoperable architecture and platform, enables collaborative data flow from shop-floor to top-floor, by connecting smart products, robots, controls, software, and services.

Controlled by [Modicon motion controllers](#), which unify PLC, motion, and robotics control functionality on a single hardware platform and integrated into [EcoStruxure Machine Expert](#) software, it offers a complete robotic solution. Built on open automation standards and protocols, it offers flexibility, scalability, and integrates easily with third-party equipment.

The most innovative controllers include digital twin capabilities to reduce commissioning time and improve the ease of implementation of systems. Our robotic solutions are compatible with [EcoStruxure Machine Expert Twin](#), our digital twin solution.

The payoff for implementing robotics:

Machine time-to-market is reduced by up to

50%

Users save up to

60%

in commissioning time

Corrective action time decreases by

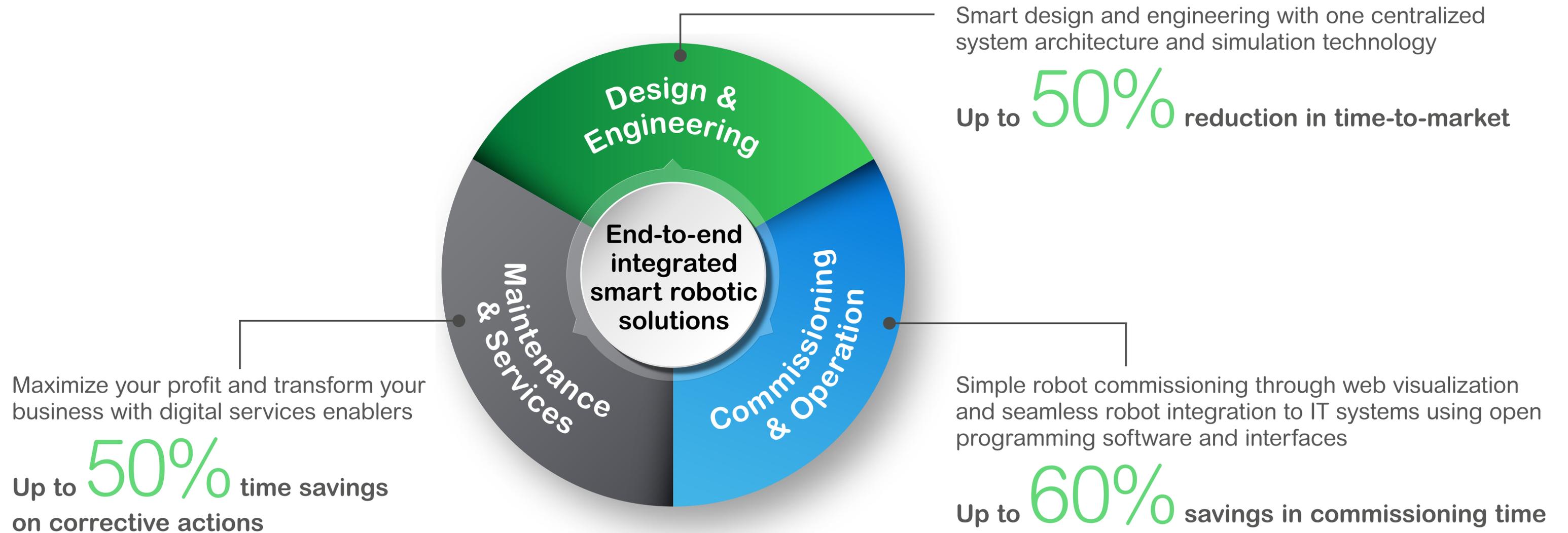
50%

Integration of robotics in machine control with EcoStruxure

The integration of robotics into the machine control solution is one of the outstanding benefits of EcoStruxure, IoT-enabled and open architecture, and platform. Smart devices and robots, edge control, and analytical software layers are seamlessly connected to enable collaborative data flow across the entire machine lifecycle.

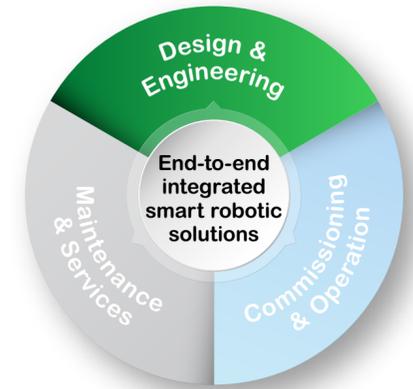


Leveraging the potential of digitization and integrated robotics throughout the machine lifecycle



Smart design and engineering

One integrated architecture, one platform using open standards, one project file and common interfaces

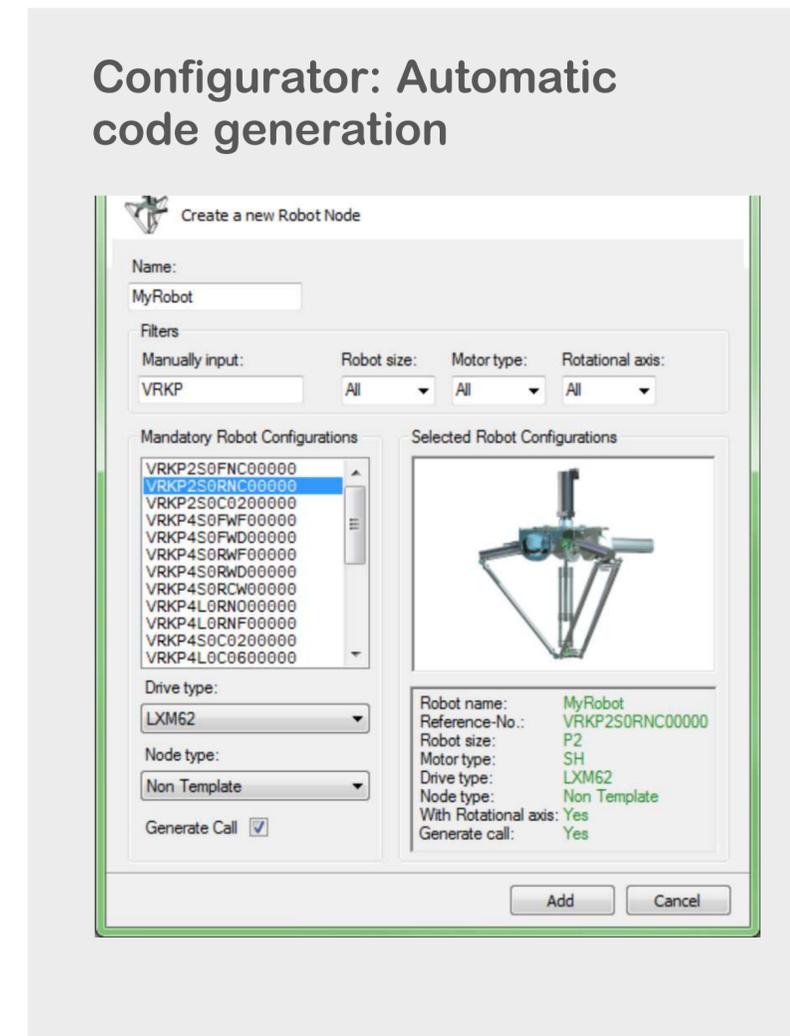


Designing smart robotics can be challenging for machine builders (OEMs):

- Supplying advanced robotic solutions
- Combining performance, safety, and reliability with shorter lead-times
- Optimizing the performance-cost ratio

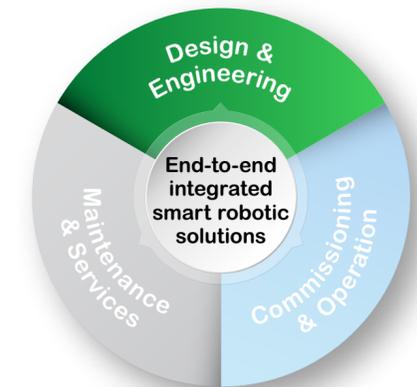
It's critical to quickly validate machine component capabilities and match specifications and requirements. To do so requires engineering design tools that:

- Address complex scalability and technical integrations from prototype to final production
- Are flexible enough to accommodate last-minute changes
- Can reduce risks



Smart design and engineering (cont.)

One integrated architecture, one platform using open standards, one project file and common interfaces

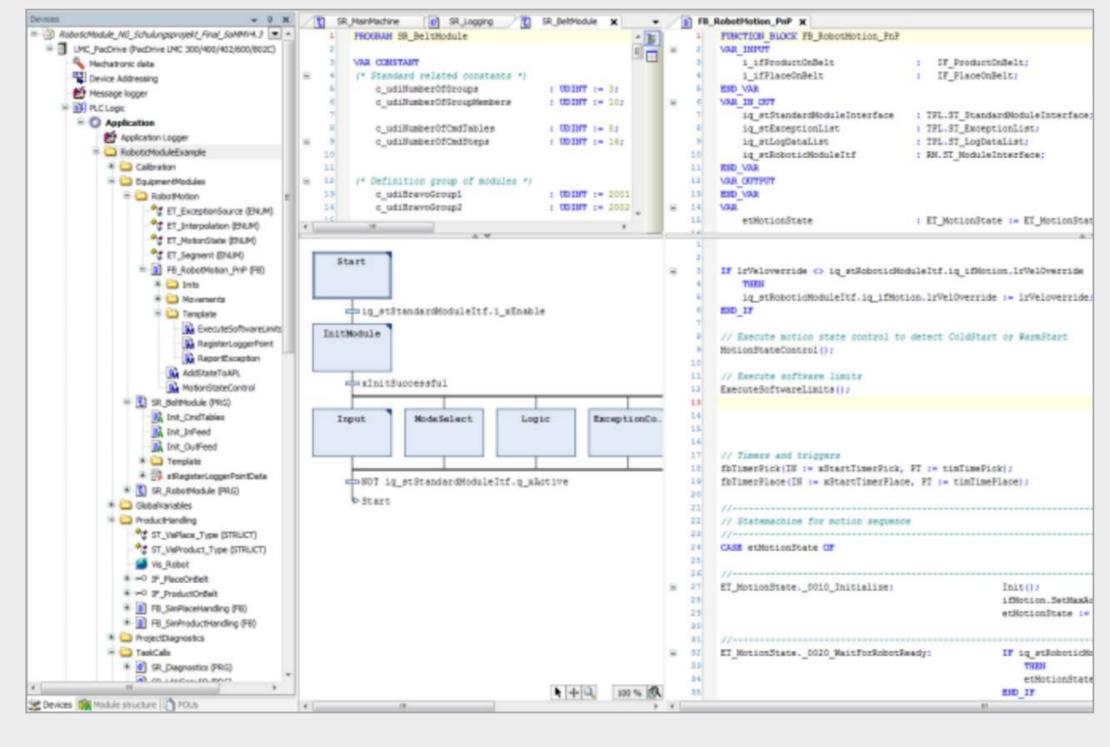


Schneider Electric helps OEM engineering departments to overcome such obstacles in four ways:

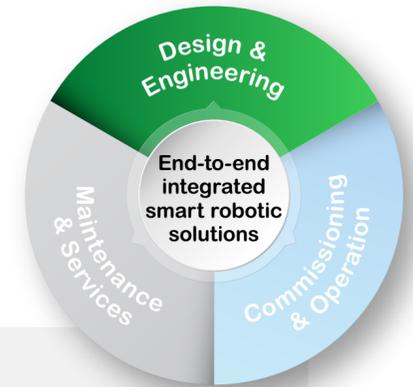
- 1. Development simplicity** – Pre-built programming helps ensure machine quality consistency, integrates third-party products, and provide flexibility to easily modify and validate design ideas.
- 2. Reduce time-to-market and risks** – Digital twin emulators, configurators, and object libraries accelerate design/build speeds and help validate robotic performance and integration before hardware is ordered and installed. This boosts quality while making machine performance more accurately predictable.
- 3. Access to productivity tools** – Within minutes, [our configurators](#) match a robot to the end-user application. You can also access comprehensive libraries to manage robots, carriers, and flow strategies that support quick realization of challenging non-standard applications.
- 4. Cybersecurity standards compliance** – Our products, systems, and solutions are developed through a global Secure Development Lifecycle (SDL) process, certified to comply with the internationally recognized [ISA/IEC 62443-4-1](#), [62443-4-2](#) cybersecurity standards. Our motion controllers have Achilles Level 1 certification for cybersecurity.

Programming with IEC 61131

- Powerful libraries
- Flexible programming language



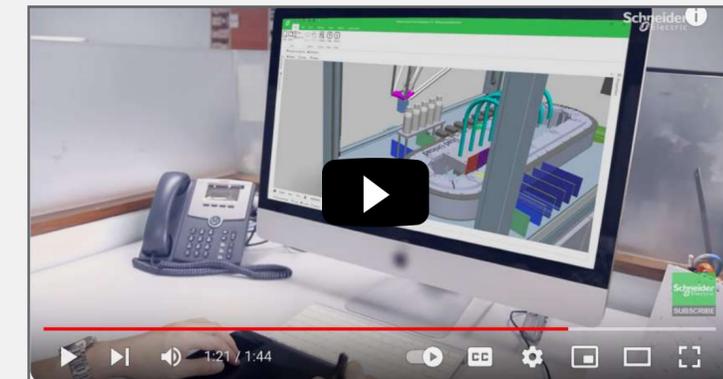
Innovation with digital twin technology across the machine lifecycle



Digital twin technology is essential in robotic design for virtualizing hardware, from raw material to final product, while facilitating any modifications.

[EcoStruxure Machine Expert Twin](#) is a digital twin software suite that lets you create digital models of real machines, including robots. Before building the machine, you can test a virtual design, perform virtual commissioning, and undertake parallel engineering and optimization of mechanical and electrical controls, **reducing time-to-market by up to 50%** and **commissioning time by up to 60%**.

Watch the video



Learn more:

[Demo of EcoStruxure Machine Expert twin](#)

[Read more](#) about the 5 ways digital twins help OEMs bring value across the entire machine lifecycle.

[How to Design a Robot with EcoStruxure Machine Expert Twin](#)

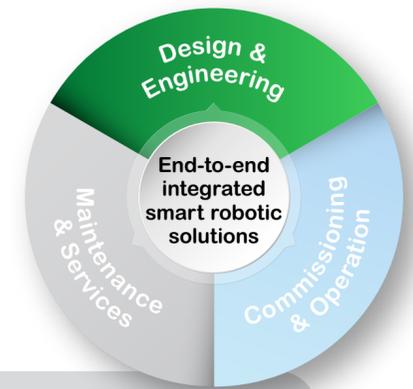


Transform machine building

EcoStruxure Machine Expert Twin helps OEMs by digitizing processes – from concept to the detailed mechanical, and software – allowing for virtual testing and commissioning, as well as shortened factory acceptance testing (FAT). Accelerate system integration tests, increase software quality, speed production ramp-up, and reduce on-site commissioning time. A **20-40% savings in investment costs** can be realized due to faster time-to-market, increased design and software quality, and reduced future downtime.

How to choose the appropriate industrial robot

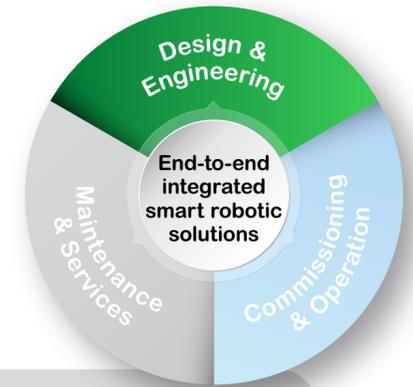
The choice of the right robots depends on the application. Some key selection criteria need to be considered, such as the collaboration with humans, speed and cycle times, space requirements, and payload.



	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system
Offer	Lexium T, P – Delta robots for pick-and-place solutions Learn more					
Description/ Main features	<ul style="list-style-type: none"> • Fast pick-and-place • Limited payload, limited work envelope • Good suitability for conveyor tracking 		<ul style="list-style-type: none"> • Food & Beverage versions available • Broad range of Delta robots 			
Advantages & criteria selection	<ul style="list-style-type: none"> • High speed • High repeatability (0.1 mm) • Load: T series up to 60 kg P series up to 15 kg 		<ul style="list-style-type: none"> • Complete washdown versions for F&B applications • Additional flexibility with tilting and double rotation optional modules 			
Targeted end segments	<ul style="list-style-type: none"> • Food & Beverage • Logistics and Warehouse 		<ul style="list-style-type: none"> • Pharmaceutical • Electronics 			
Targeted applications	<ul style="list-style-type: none"> • Primary packaging • Natural product handling (fish, poultry) • Assembly 		<ul style="list-style-type: none"> • Pick-and-place • Sorting 			

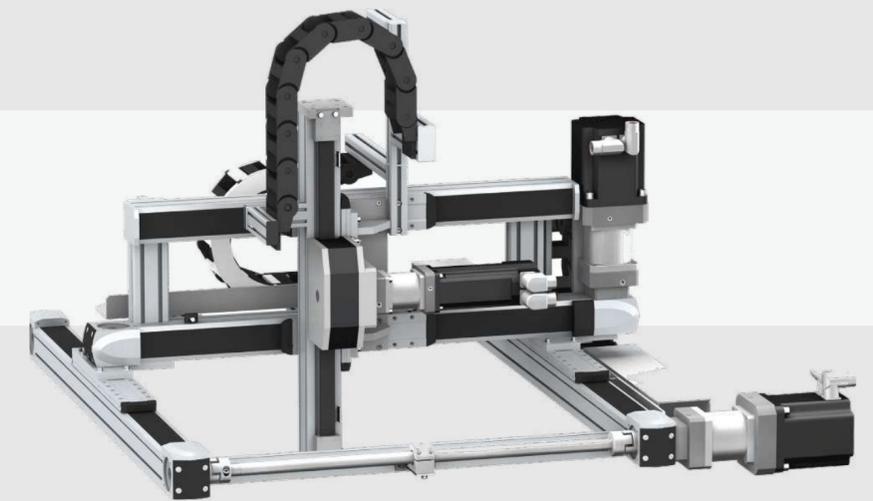


How to choose the appropriate industrial robot (cont.)



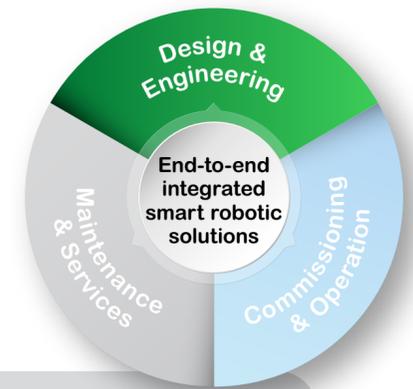
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	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system
Offer		Lexium MAX – Cartesian multi axes systems for 1, 2, 3 dimensional positioning solutions				Learn more
Description/ Main features		<ul style="list-style-type: none"> • Combination of linear axis • Very space efficient 		<ul style="list-style-type: none"> • Flexible in payload and work envelope • Good suitability for conveyor tracking 		
Advantages & criteria selection		<ul style="list-style-type: none"> • High load capacity (60 kg standard) • High linear speed (up to 8 m/s) • Wide workspace • Flexible (customizable according to demand) 		<ul style="list-style-type: none"> • High repeatability (0.1 mm) • Easy programming • Low cost 		
Targeted end segments		<ul style="list-style-type: none"> • Automotive • Food & Beverage • Logistics and Warehouse 		<ul style="list-style-type: none"> • Metals and Machining • Pharmaceutical • Electronics 		
Targeted applications		<ul style="list-style-type: none"> • Assembly • Loading/Unloading • Material Handling 		<ul style="list-style-type: none"> • Pick-and-place • Packaging and Palletizing • Sorting 		



How to choose the appropriate industrial robot (cont.)

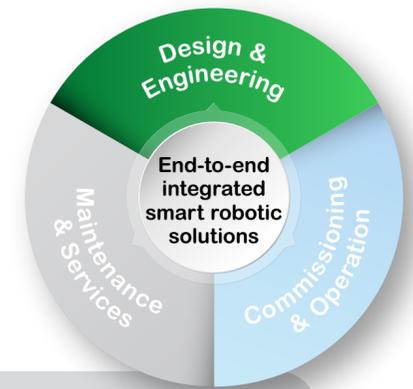
The choice of the right robots depends on the application. Some key selection criteria need to be considered, such as the collaboration with humans, speed and cycle times, space requirements, and payload.



	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system
Offer			Lexium Cobot – Designed to work alongside humans			Learn more
Description/ Main features			<ul style="list-style-type: none"> • Optimal solution for small- and medium-size businesses • Takes on monotonous, tedious, repetitive, or physically demanding tasks 			
Advantages & criteria selection			<ul style="list-style-type: none"> • Quick to install, easy integration, mobile • Easy-to-use and program, flexible and versatile • Integrated safety features • Connected, vision solutions 		<ul style="list-style-type: none"> • Maximum payload 18 kg • Maximum reach 1.3 m • Number of axes 6 	
Targeted end segments			<ul style="list-style-type: none"> • Automotive • Electronics • Food & Beverage • Life Science 		<ul style="list-style-type: none"> • Electronics • Logistics and Warehouse • Metals and Machining 	
Targeted applications			<ul style="list-style-type: none"> • Pick-and-place • Assembly • Quality Testing • Machine Tending 		<ul style="list-style-type: none"> • Packaging and Palletizing • Material Handling • Gluing and Welding • Painting and Polishing 	



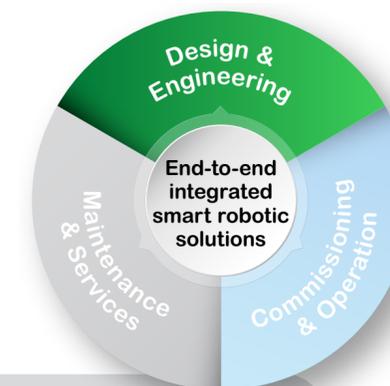
How to choose the appropriate industrial robot (cont.)



The choice of the right robots depends on the application. Some key selection criteria need to be considered, such as the collaboration with humans, speed and cycle times, space requirements, and payload.

	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system	
Offer		Lexium PAS, PAD Learn more		Lexium CAS, CAR Learn more		Lexium TAS Learn more	
Description/ Main features		<ul style="list-style-type: none"> Linear axes with movable carriage and fixed axis 		<ul style="list-style-type: none"> Cantilever axes with moveable axis profiles or end plates and fixed drive block. 		<ul style="list-style-type: none"> Linear tables with movable carriage and fixed axis 	
Advantages & criteria selection		<ul style="list-style-type: none"> High load capacity (Fz 6.270 N) High linear speed (up to 8 m/s) High stroke length (up to 5.5 m as standard) Flexible (customizable according to demand) High repeatability (0.05 mm) 		<ul style="list-style-type: none"> Space saving solution for vertical applications High load capacity (60 kg standard) High stroke length (up to 1.8 m standard) Flexible (customizable according to demand) High repeatability (0.05 mm) 		<ul style="list-style-type: none"> Double guiding system High rigid axis High repeatability (0.02 mm) Flexible (customizable according to demand) 	
Targeted end segments		<ul style="list-style-type: none"> Automotive Food & Beverage Logistics and Warehouse Metals and Machining Pharmaceutical Electronics 					
Targeted applications		<ul style="list-style-type: none"> Assembly Loading/Unloading Material Handling Pick-and-place Packaging and Palletizing 					

How to choose the appropriate industrial robot (cont.)

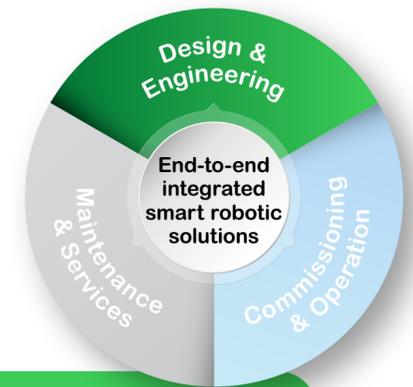


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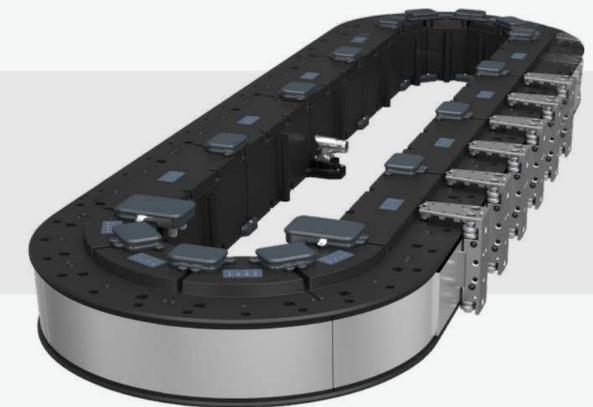
	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system
Offer	Lexium SCARA – pick-and-place solutions					Learn more
Description/ Main features	<ul style="list-style-type: none"> • High-speed and accuracy • Flexibility and versatility • Space efficiency 		<ul style="list-style-type: none"> • Cost savings • Low maintenance • Ease of integration 			
Advantages & criteria selection	<ul style="list-style-type: none"> • Payload of maximum 6 kg • Large workspace: up to 700 mm arm length up to 300 mm Z-stroke 		<ul style="list-style-type: none"> • Protection class up to IP65 (with accessories) • High repeatability: +/- 0.02 mm for XY +/- 0.01 mm for Z +/- 0.01 Deg. for rotation 			
Targeted end segments	<ul style="list-style-type: none"> • Electronics assembly • Food and beverage • Life science 		<ul style="list-style-type: none"> • Logistics/warehousing • Battery manufacturing 			
Targeted applications	<ul style="list-style-type: none"> • Assembly • Pick-and-place • Loading/unloading 		<ul style="list-style-type: none"> • Packaging • Material handling 			

How to choose the appropriate smart conveyor

The choice of the right robots depends on the application. Some key selection criteria need to be considered, such as the collaboration with humans, speed and cycle times, space requirements, and payload.



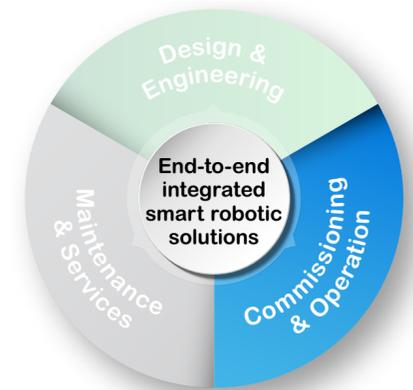
	Delta robots	Cartesian robots	Collaborative robots	Single-axis systems	SCARA	Multi carrier product transport system
Offer						Lexium MC12 – Next-generation transport system Learn more
Description/ Main features						<ul style="list-style-type: none"> • Unprecedented simplicity in installation and commissioning • Transport system for moving, positioning, or grouping objects in machines • Freedom for designing faster and more flexible machines with less footprint
Advantages & criteria selection						<ul style="list-style-type: none"> • High load capacity per carrier (2.2 kg) • High speed (4 m/s) • High acceleration (120 m/s² for 1 kg load) • Maximum track length of 40 m
Targeted end segments						<ul style="list-style-type: none"> • Food & Beverage • Electronics • Life Science
Targeted applications						<ul style="list-style-type: none"> • Assembly • Food Processing • Material Handling • Packaging (cartoning, grouping, filing, folding, labeling)



Smart commissioning and operation

Higher commissioning speed and performance certainty – 60% of commissioning time is spent resolving control software, protocol, and integration issues. However, these delays can be avoided by using [digital modeling tools](#). Engineers no longer need to wait until a machine is physically built to perform commissioning tasks. Testing can take place digitally using only a PLC and the virtual model. Virtual software control testing and virtual commissioning make it easier and less costly to perform systems integration and software quality evaluation as these no longer have to be performed on-site.

IT/OT convergence – A single-platform ecosystem providing communication between machines, robots, and IT systems enabling seamless integration of automation and software using open standards.



Commissioning tools that drive efficiencies

EcoStruxure Machine Expert Twin

A digital twin can simulate individual objects, map active component behaviors, test machine design under real-life conditions, and continuously improve operations today and in the future.

[Learn more](#)

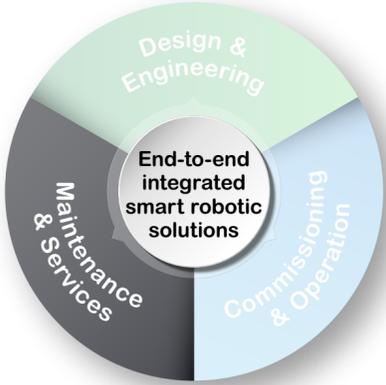
EcoStruxure Machine SCADA Expert

Easily improve the efficiency of the robot and machine system by simplifying access to contextualized operations with more intuitive graphic dashboards, making production data available anywhere and the ability to transfer data to the cloud.

[Learn more](#)



Smart maintenance services

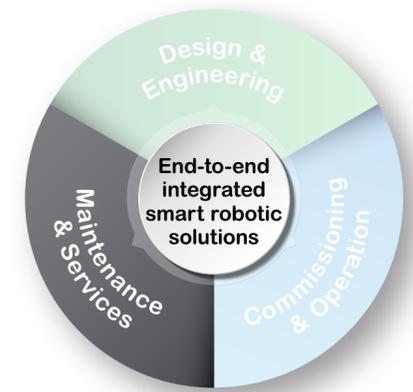


In a post-sales services scenario involving customer training, operation optimization, and predictive maintenance services, a machine builder can emerge as a marketplace winner by successfully reinventing himself within the context of the new digital age. Below are several examples of post-sales service opportunities:

- **Post-installation support** – Digital cloud-enabled services create revenue-generating opportunities such as remote operator training, testing of software upgrades, downtime prevention, and performance efficiency evaluations. Remote services allow OEM or plant engineers and operators to analyze machine performance data and pinpoint where efficiency gains can be made. This helps Machine Builders (OEMs) to develop a broader relationship with their client base. This results in fewer instances of unscheduled machine downtime and a **50% improvement in Overall Equipment Effectiveness (OEE)**.
- **Remote monitoring and management tools** – Tools that program, maintain, and monitor machines remotely save on engineer travel costs while speeding up responses to diagnostic issues, boosting levels of customer satisfaction.
- **Condition-based maintenance services** – By tracking machines worldwide, remotely monitoring performance data, and applying fixes when anomalies occur, OEMs provide additional business value to their end-user customers. The monitoring identifies anomalies before they can manifest themselves into unscheduled downtime, thereby earning long-term customer trust.

Services-oriented tools

Grow your machine and robotics-related services business with a suite of service solutions:



EcoStruxure Machine Expert Twin

EcoStruxure Machine SCADA Expert

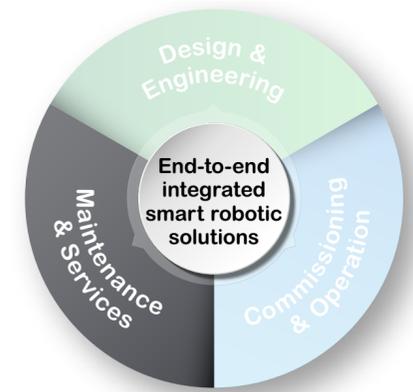
- Operator training, software upgrade testing, downtime prevention, and performance efficiency evaluations help OEMs develop a broader relationship with their client base.
- Remote services enabled by a digital twin, running on-premise parallel to the real machine, allow OEMs, plant engineers, and operators to pinpoint where to make efficiency gains.
- This results in fewer instances of unscheduled machine downtime and a 50% improvement in Overall Equipment Effectiveness (OEE).



[Learn more](#)

Services-oriented tools (cont.)

Grow your machine and robotics-related services business with a suite of service solutions:



EcoStruxure Machine Expert Twin

EcoStruxure Machine SCADA Expert

- An easy-to-use, powerful, and affordable solution to manage single or multi-robotic applications.
- Bi-dashboard template – access to contextualized data adapted to the user profile.
- Open architecture – easy adaptability and connectivity to existing systems.
- Built-in, easy-to-use database interface allows the creation of advanced applications where historical data is required.
- Built-in functionality to create FDA 21 CFR part 11 compliant projects with traceability and e-signatures.



[Learn more](#)

Critical role of global partnerships



Accelerate modernization through partnerships

Today's manufacturing firms recognize that change is imperative to remain in business, with robotics deployments and digital transformation projects accelerating faster.

But implementing such massive changes can seem overwhelming. Most firms recognize that they cannot tackle these challenges alone and that collaboration and partnerships are critical to success.

Only through strategic partnership can turnkey smart manufacturing and smart factory be delivered.



Schneider Electric: Your one-stop shop partner for robotics, automation, and services

Global presence with local support – As a worldwide single-source provider, Schneider Electric combines mechanical, electrical, software, and services domains to offer solutions embedded with end-to-end integrated smart automation, robotics, PLC logic, safety, HMI, vision, communications, and IT data acquisition.

Offerings are combined with a "Glocal" support structure. Our unmatched proximity to you enables us to understand better, anticipate and adapt to support your business continuity with high ethical standards in everything we do with our partners.

Access to a network of experts – Our automation control, software, robotics, and digital services experts across key applications and industries support machine builders (OEMs) and systems integrators throughout their project solution lifecycle design, development, installation, and support stages.

Customers can feel more confident knowing they have the support of both the component manufacturer and machine builders or integrators.



Your partners of choice for robotic and software-centric machines

Empowering our Alliance Partners

The Schneider Electric Alliance Partner Program brings together a vibrant cross-section of industrial automation professionals –system integrators, machine integrators, and industrial automation distributors – to facilitate co-innovation and create value for customers

Working together in a unique ecosystem, Alliance Partners are empowered to deliver smooth system integration, interoperability, and ease of use crucial for next-gen industries.

[Learn more](#)

[Locate integrator](#)



Discover how Automotion, our Alliance Partner and center of excellence for motion control and robotics solutions, developed high-end robotics solutions running in heavy conditions to sort and extend the shelf life of fish.



Advantage Service Plan for robotics

Maintaining robotic systems is essential to make the process reliable, efficient and productive. That's why Schneider Electric designed the service offer for robots so we can offer you a comprehensive value with the flexibility to help you to increase productivity.

The plan covers services relevant to operating and maintaining your robots including:

- Preventive maintenance visit
- Remote technical support
- On site corrective maintenance service
- Preferred rate for parts
- Optional extended warranty

Lexium Robot



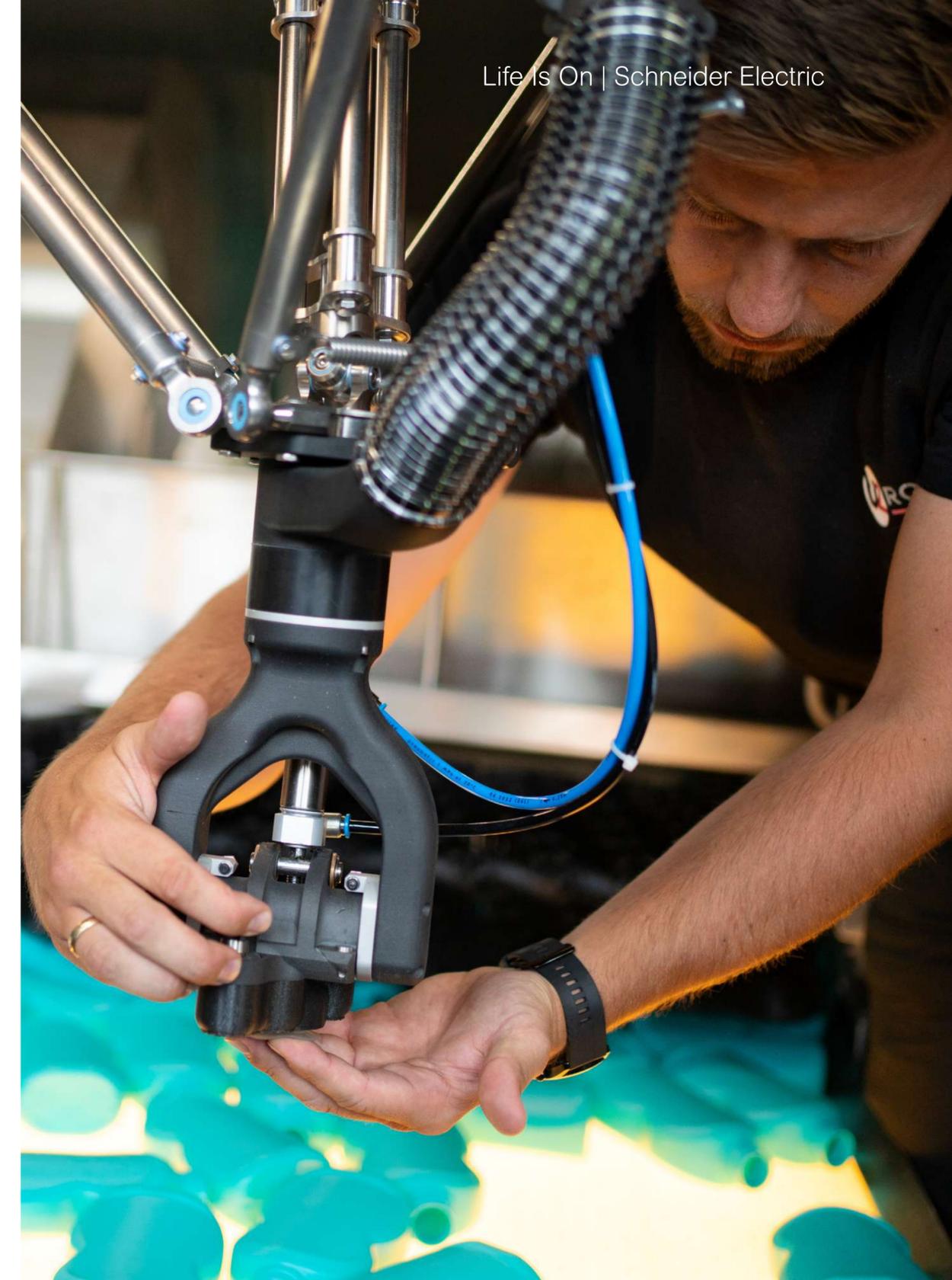
Lexium Cobot



Lexium SCARA



Lexium MC-12 MulticARRIER



Schneider Electric cybersecurity consulting

Today's manufacturing plants are becoming more digitized and interconnected. Across these intelligent factories, machines, and products can better communicate to drive increased production. While the internet of things (IoT) and related connectivity benefits drive operational efficiencies at an unprecedented rate, protecting data and critical systems is a critical challenge facing our digital world.

With increased connectivity comes increased risks for potential cyberattacks. Schneider Electric helps machine builders (OEMs) and end users mitigate risks through global cybersecurity consultants, products, and architecture development that follow ISA/IEC 62443-4-1 and 62443-4-2 cybersecurity standards.

Our **Industrial Automation Audit and Assessment (IA3)** process involves experts auditing your site and documents and creating a recommendation plan to help better secure your site.

Our decades of experience manufacturing, installing, and integrating key industrial automation assets such as PLCs, VFDs, HMI, motion controllers, and robots make us unique in understanding your business and how to make your IT/OT integration projects more cybersecure.



Final thoughts



The path forward

The right partnership helps machine builders (OEMs) and systems integrators to craft reliable, high-quality robotics solutions and better support industrial sector end users.

- 1. Market share growth** – Machine builders with robotics expertise are becoming increasingly critical to end users to help reduce implementation risks, minimize downtime, increase maintenance and operating efficiency, and boost process efficiency.
- 2. Increased competitiveness** – Maintain a constant pulse on end-user issues and requirements by providing comprehensive solutions and unique domain expertise.
- 3. More sustainable solutions** – As global companies reassess CO₂ emissions and global warming, it becomes paramount to offer machine solutions that reduce waste and material consumption, and limit energy consumption throughout the entire product lifecycle.
- 4. More resilient solutions** – Connected systems and data sharing are critical for safeguarding end-to-end process resilience. Partners who use open and sustainable solutions can optimize system resiliency.
- 5. Empowered people** – Robots, especially cobots, enable workers to focus on fewer tedious and repetitive tasks and instead add greater value when operating data-driven integrated machines that empower them to make rapid, accurate, and profitable decisions.
- 6. One-stop-shop cost savings** – End-to-end solutions and open technology architectures save OEMs time and money, spending less time researching and validating solutions, and more on future developments.

Towards robotics in Industry 5.0

A fifth industrial revolution focused on human/machine collaboration

Whereas Industry 4.0 is about interconnecting factories and their systems – a process that influences design offices, production lines, work processes, and individual machines – **Industry 5.0 looks beyond machine-to-machine productivity and focuses primarily on human-to-robot interactions.**

Industry 5.0 is based on integrating machines with robots and the collaboration of this hybrid environment with humans. In this environment, open system architectures are critical to achieving the collective goals of resilience, sustainability, and safe and productive human interaction. As such, the Industry 5.0 evolution will be focused on combining the strengths of humans and robots for more efficient and healthier manufacturing.



Your digital partner for end-to-end integrated robotics

Machine builders (OEMs) and system integrators who partner with Schneider Electric in projects that help end users integrate robots and digitize their operations need not be pioneers.

Project risk and deployment times have been reduced for many machine builders (OEMs) and system integrators who have already embraced IT/OT convergence using open Schneider Electric architectures.

We have upgraded several of our own manufacturing sites with robots and digital solutions and offer a global perspective on how to design, build and operate effective robotics and digital solutions across operations.

Our digital machines, advanced robotics, and automation solutions help you to exceed end-user expectations by simplifying gathering, consolidating, analyzing, and documenting information. As a result, concept-to-commissioning times can now be reduced from months to weeks, with reconfiguration times dropping from weeks to days.

To learn more, visit:

[Integrated Robotics](#)

[EcoStruxure Machine](#)

Life Is On



To learn more information about
industrial robotics visit

se.com/robotics



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