

# Packaging Machinery

## Advanced Automation Solutions



- Maximized flexibility
- Proven reliability
- Fast machine design and development

# What's your speciality?

## Primary packaging

### Speed

Speed is the main challenge here. But there is also a need for product batch size independence, easy-to-clean and easy-to-operate machines as well as the need to maintain hygiene standards. Omron solutions for primary packaging increase both the speed and the flexibility of your primary packaging machines – thanks to our new leading-edge controller, which combines the latest real-time Ethernet fieldbus technology, EtherCAT, with our “One Software Environment” concept. This unique combination empowers you to phase-out conventional mechanical systems, and replace them with highly versatile Delta-robot and vision systems.

## Manufacturing process

### Quality

Even before the end-product is wrapped, canned, bottled or bagged, many packaging machine builders take time to consider their customers operations from start to finish. The repeatability of operations with high productivity and high quality standards is a daily challenge. That's why Omron offers a wide product portfolio adapted to recipe-driven batch production, this requires technologies such as high-speed, high-resolution multi-loop regulation control, high-speed data processing and storage as well as seamless vision-based quality inspection.

## Secondary packaging

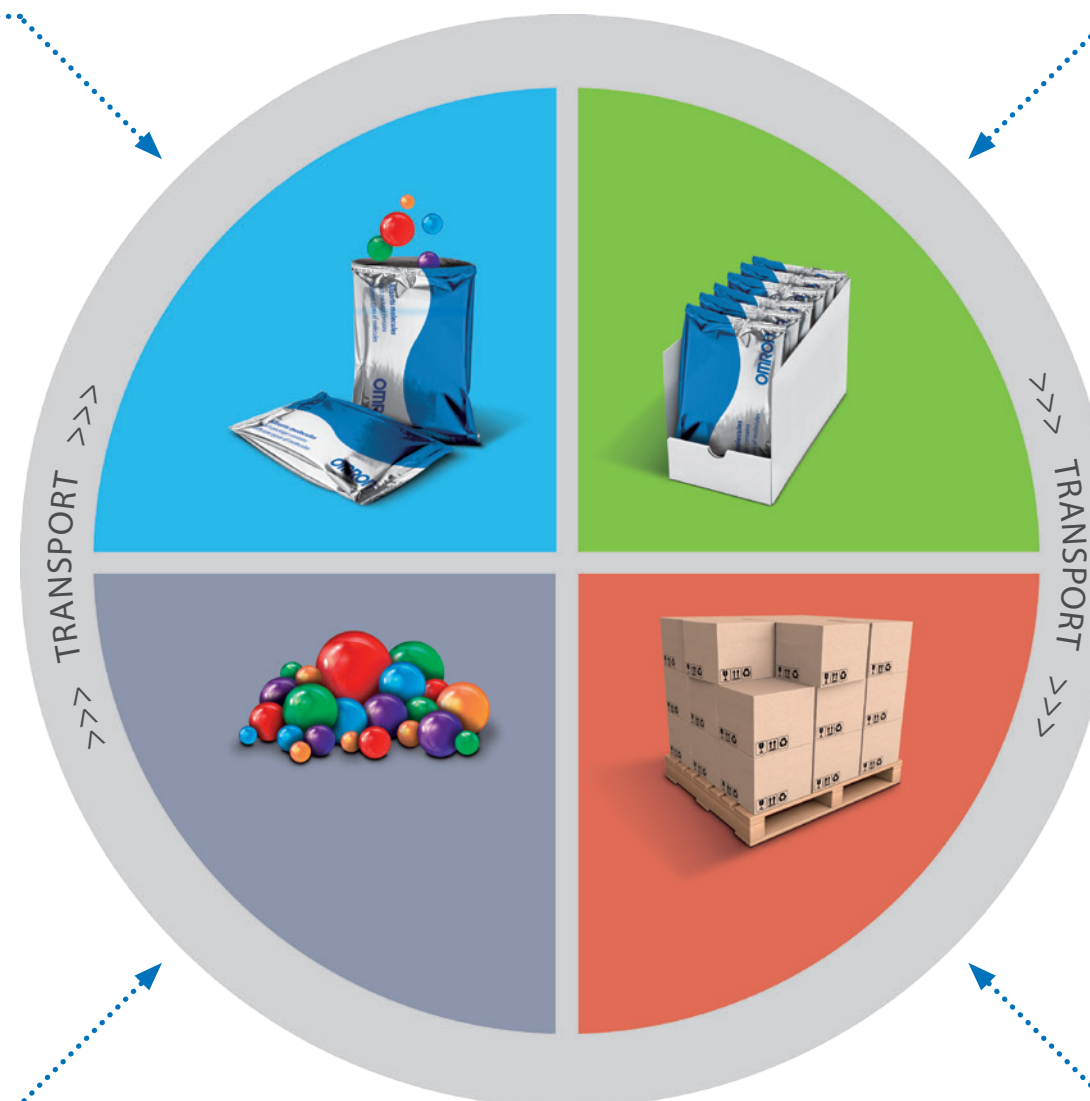
### Flexibility

The key challenges here are to match the production speeds of the primary packaging, to ensure individual pack or multi-pack integrity, and to ensure easy adaptation of linear guides to convey both primary and secondary packages. Omron solutions help you build more flexibility into your machines. We can provide the latest robotics and vision systems to help create, for example, robotic cartoners that pick and load 12 products simultaneously, using a pack pattern of either one, two or three layers. With a set-up like this, increasing the speed is simply a question of increasing the number of products picked per operation.

## Final packaging

### Robustness

The main challenge here is to ensure that high loads can be reliably handled at continuous high cycle frequencies. Omron solutions include a wide range of highly robust electromechanical linear axes. Ready-to-install linear modules with different drive variants and turn/gripper modules complete the fully equipped handling modules. The ability to use electric actuators in any combination also increases the versatility for cost-effective adaptations.



Fresh food



Dry & snack foods



Bakery & biscuits



Beverage (alcoholic, non-alcoholic, dairy, oil & CSD)



Pharmaceuticals



Ready meals



Confectionary



Liquid & canned food



Cosmetics & healthcare



Homecare & other



# Your needs as a machine user ... ... our future-proof answers



## High flexibility

Flexibility is the ability to change product, quantity and format as quickly as possible – and it is key to your customers’ profitability. What’s more Omron can help you improve it in a variety of ways. For example, by replacing mechanically coupled movements with intelligent servo drives. This reduces product changeovers to mere software commands. It also helps improve hygiene standards as it reduces the total number of machine parts by up to 20%.



## Enhanced safety

We manufacture a wide variety of safety components, controllers and networks, and our intelligent safety concepts allow manual intervention on individual stations without having to shut down the entire machine. We also offer a complete safety design consultancy from risk assessments to CE marking, which can take care of all the safety requirements of your machine while you focus on optimizing its performance.



## Maximum versatility

With Omron robotics and vision systems, you can offer versatile packaging solutions with automatic changeover functions which reduce maintenance and machine downtime. These technologies are now much easier to integrate. So no matter how many different package shapes or sizes your customers need, you can now offer a single machine that can handle them all – without sacrificing speed and productivity.



## Fast detection & Reliable inspection

Omron offers a complete portfolio of vision products ranging from application-specific vision sensors up to PC-based vision systems with EtherCAT embedded. Omron vision systems can be employed for object detection or quality inspection or a combination of both applications. Place it downstream of a packaging machine and get a reliable final packaging inspection from content detection, label defect and position inspection, to barcode verification up to OCR/OCV inspection and printed elements check such as “best-before” date or lot numbers. Use it upstream of a robotic handling module and you can simultaneously track “on-the-fly” the product position on a conveyor, detect the positioning angle relative to the conveying direction and sort the product by pattern, color or surface. Omron vision systems can support most of the high-speed, random product identification and location required in many pick- and-place applications.



## Simplicity

You need simplicity in your machine’s automation solutions – it will minimise your development times and maximise your ROI. That’s why our field application engineers have concentrated the best of their knowledge into dedicated function blocks. These ready-made pieces of software are key to easily integrating third-party devices. They also ensure easy communication with international standards as well as proprietary protocols. And, they encapsulate and protect your machine module program. So next time you need some code, call one of our application engineers. You might save some time.

# Your needs as a machine builder ... ... our future-proof answers



## All-in-one platform

Integrating robotic, motion and sequential logic control into a single multitasking controller platform. One of the latest solutions that takes full advantage of the Omron experience in automation is Sysmac. This is a totally new type of controller, combining EtherCAT with our “One Software – One connection” approach to machine automation. Imagine, a single environment for programming, simulating, and monitoring motion, sequential logic, robotics and vision. With this all-in-one platform it has never been easier to design and develop your machine automation.



## Openness

We exclusively use internationally-accepted communication standards (see next page) and programming languages (IEC61131-3). This ensures transparent data traffic between the individual modules and machines. This openness also means easy integration of non-Omron automation products for you – as well as easier factory-wide networking for your customers.



## Performance

A high-performance machine (combining high-speed sequential tasks and complex motion and robotic kinematics) needs a high-performance fieldbus. That’s why Omron uses EtherCAT for processing, it is the fastest real-time Ethernet-based fieldbus available. Just one Ethernet cable carries sequential logic and motion data control. The entire network can be addressed in a few microseconds, regardless of what slave devices you use. With such a deterministic solution, high-performance is certain.

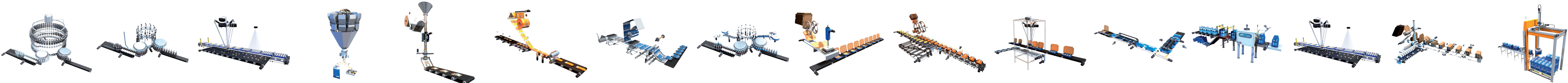
## Primary packaging



## Secondary packaging



## Final packaging



### Liquid filling

- Rotary bottle filler
- Linear bottle filler
- Tube filling machine
- Aerosol filler
- Vial filler
- Rotary cup filler

### Capping, Closing or Seaming

- Screw capping
- Crown capping
- Press-on lidding
- Can seaming
- Aerosol valve closing
- Mascara closing
- Can overcapping
- Finger pump placer

### Assortment packer or Tray loading unit

- Vision-guided cross-flow Delta Robot feed
- Vision-guided inline-flow Delta Robot
- Vision-guided multi-Delta Robot tray loader

### Solid filling

- Nett weighing machine
- Gross weighing machine
- Linear multi-head weighing machine
- Circular multi-head weighing machine
- Auger filler
- Volumetric cup filler
- Count filler

### Vertical form fill & seal

- Vertical flow wrapper
- Vertical form, fill and seal
- Aseptic carton packer
- Stick FFS packaging (sugar)
- Large tubular bag / sack FS (fertiliser)
- Baler FFS

### Horizontal form fill & seal

- Horizontal flow wrapper
- Horizontal form, fill and seal
- Stretch film wrapper
- Side seal "U" wrapper
- Modified atmosphere packaging HFFS
- Stand-up Pouch/Sachet packer

### Thermoform, fill & seal or Blister sealing

- Tray sealer, fill & seal
- Tray thermoform, fill & seal
- Cup thermoform, fill & seal
- Blister thermoform, fill & seal
- Blow mould, form, fill & seal (eye drop doses)
- Modified atmosphere packaging TFFS
- Vacuum belt wrapper

### Label, Code or Sleeve applicator

- Glue labelling
- Heat seal labelling
- Pre-gummed label applicators
- Tag labelling
- Hot foil coding
- Wet ink coding machines
- Continuous stream ink-jet coding
- Laser coding
- Shrink sleeve applicator
- Temper evident sleeve applicator

### Carton erector & collator

- Carton blank erecting
- Tray erecting
- Rotary carton feeder
- Rotary pick & place feeder / inserter / lid fitter / tray denester
- Linear carton feeder
- Collator
- Stacker

### End-load or Side-load cartoner

- Vertical cartoner
- Top-load cartoner
- Inline-flow Delta Robot carton loader
- Multi-axis pick & place robotic cartoner (stretch film bander)
- Pre-made bag-in-box cartoners
- Reel fed bag-in-box cartoners
- Wrap-around cartoning
- Wrap-around carton sleeving

### Top-load or Wrap-around cartoner

- Vertical cartoner
- Top-load cartoner
- Inline-flow Delta Robot carton loader
- Multi-axis pick & place robotic cartoner (stretch film bander)
- Pre-made bag-in-box cartoners
- Reel fed bag-in-box cartoners
- Wrap-around cartoning
- Wrap-around carton sleeving

### Glue, fold & tuck closing unit

- Carton closing
- End flap carton closing
- Three flap carton closing

### Shrink wrapper

- Shrink-wrap machines (tunnels)
- Stretch-wrap machines
- Tray shrink machines
- Stretch banding machines
- Division inserting machine
- Spiral wrapping machines
- Sleeve wrapping machines

### Erect, Form or Close

- Tray / case erector
- Tray / case forming
- Tray denester / stacker
- Crate stacking / unstacking
- Division inserting machine
- Partition placer and lid fitter
- Case tapers (case sealer)
- Case strapping machines

### Case packer

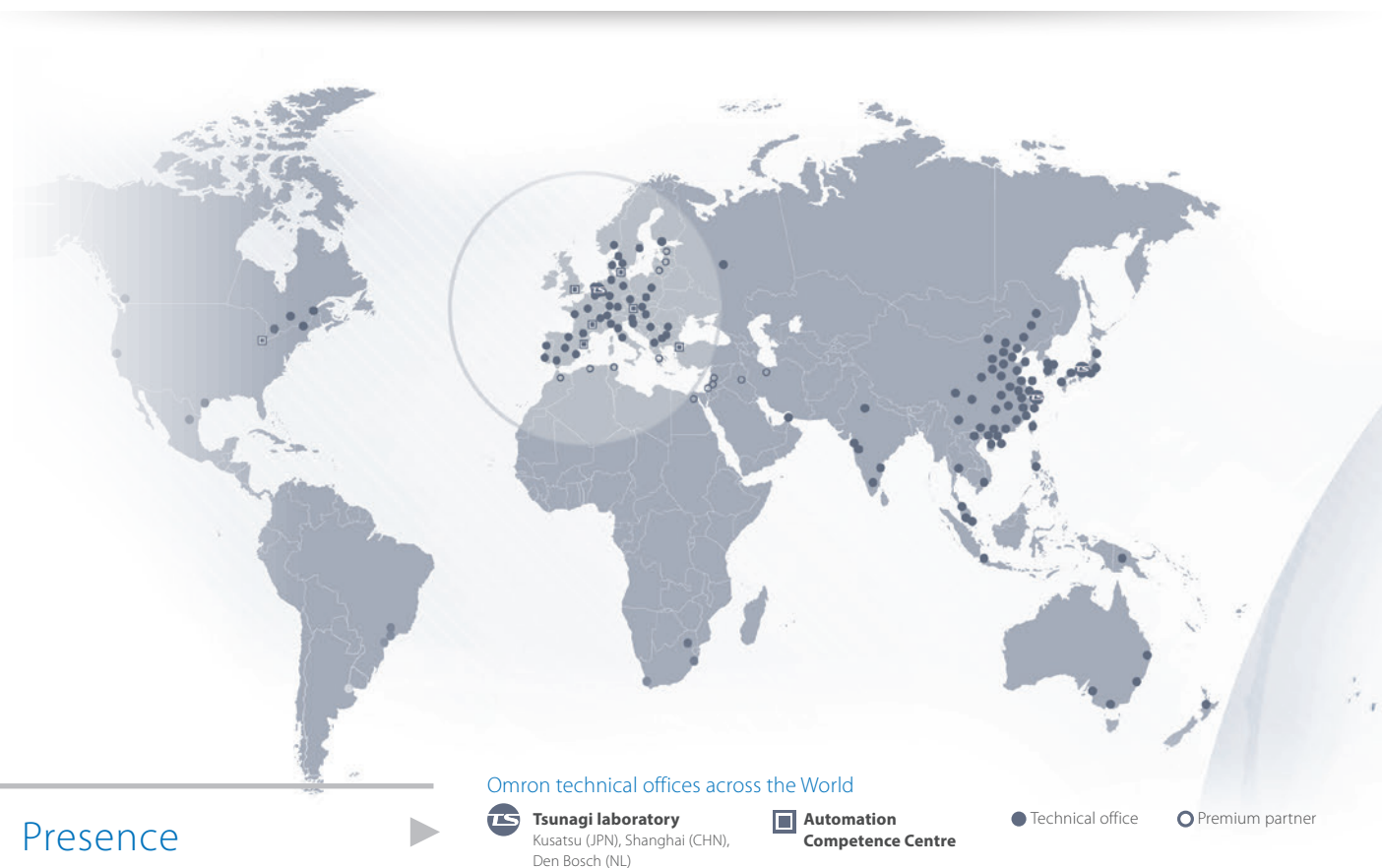
- Drop packing
- Top-load case packing
- Side-load case packing
- Bottom-load case packing
- Crate packer
- Wrap-around case packing
- Wrap-around lidding machine

### De-palletizer/palletizer

- Low-level palletising
- High-level palletising
- Column or gantry palletiser
- Multi-axis robot palletiser
- Layer palletising
- Roller-shutter palletiser
- Case stackers / de-stackers
- Pallet strapping
- Pallet shrink-wrapping
- Pallet stretch-wrapping



## We have people to support you ...



### Presence

### Competence



Share your ideas with our sales representatives. They have the experience and competence, and are empowered to make decisions. Thousands of OEMs have put their trust in our people. Find out how you can also benefit – just give us a call.



As your project matures make use of our Automation centers to test and catch-up with technology trends in motion, robotics, networking, safety, quality control etc. Make use of our Tsunagi (connectivity) laboratory to interface, test and validate your complete system with our new machine network (EtherCAT) and factory network (EtherNet/IP).

As soon as our involvement starts, a dedicated application engineer is appointed to coordinate all of the technical aspects of your project. Our engineers have in-depth expertise in and knowledge of networks, PLCs, motion, safety and HMIs when applied to machine automation.

## ... and your customers



### Confidence



During your prototyping phase you will need flexibility in technical support, product supply and product exchange. For those reasons, we will assign a dedicated Customer Service member, available to handle all logistic enquiries and to ensure you can keep your mind on the real issues.



As a global manufacturer, we can provide our services anywhere in the world. Wherever you are installing your machines, we can arrange, on-site, a liaison sales engineer to facilitate training, spare parts supply or even machine commissioning. All this in the local language with local documentation – giving you complete peace of mind.

Throughout the life-cycle of your machine, Omron offers reliable supply, regular software upgrades, rapid repair service and effective global support to your end users. Our standard commitment includes:

- 5 day repair door to door
- 3 day delivery



Thanks to our relationships with packaging associations and universities, we are able to keep always informed on machine builders needs and to support customers with state of the art solutions.

# Your specialist automation partner ...

## Providing solutions is all about skilled people ...

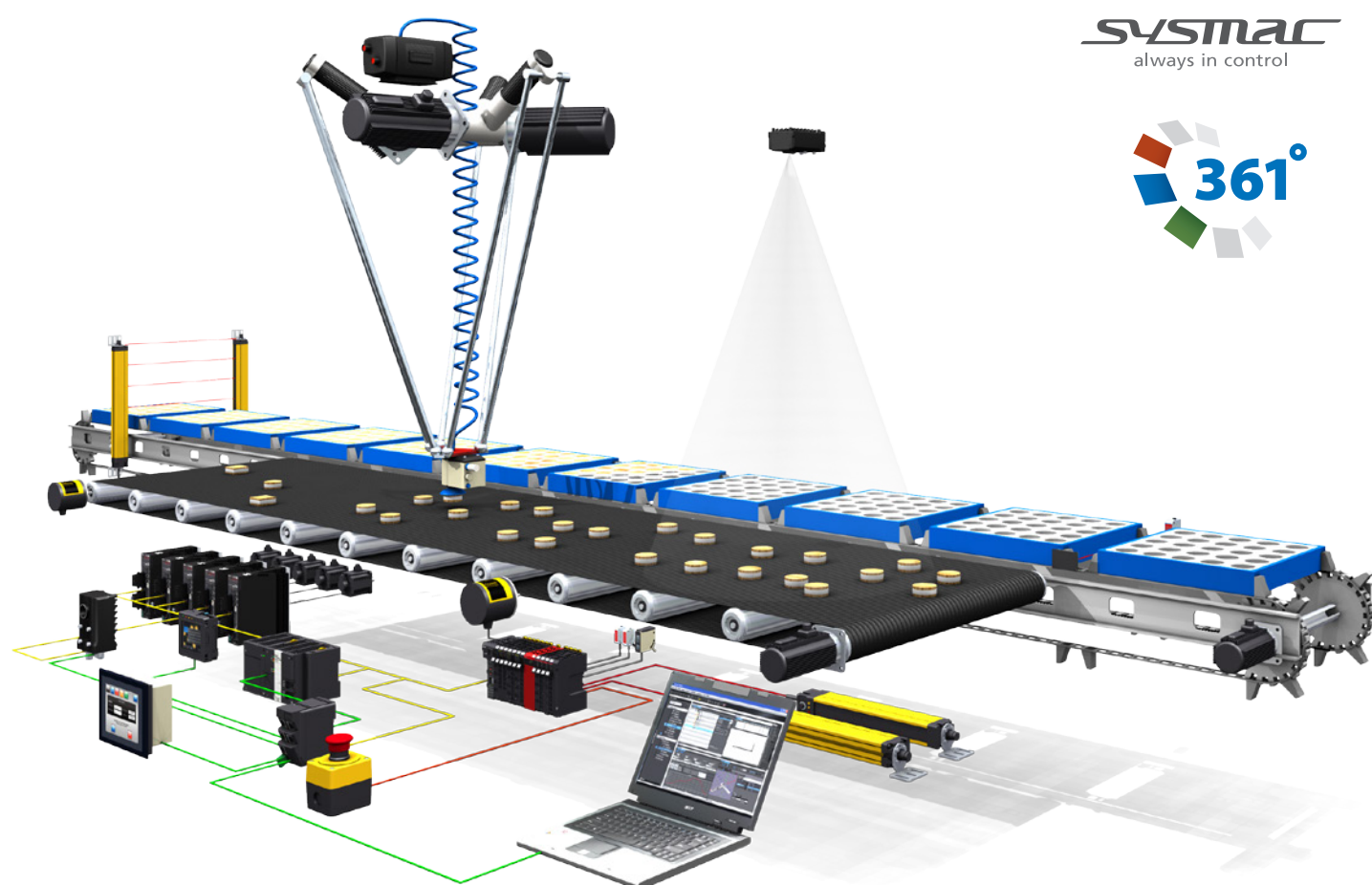
At Omron, we believe that assisting you with a hands-on approach benefits both you and ourselves. When we assist you in integrating automation solutions we gain key insights to your challenges – knowledge that not only enables us to provide the most optimized solution but also helps us evolve our future products and services.

That's why our engineers are totally committed to providing you with flexible solutions that include more intuitive and advanced control, more real-time continuous-motion operation, easier

robotic and vision integration, and more recipe-driven changeovers that take place at the touch of a screen. Our expertise is yours. Use it to turn your ideas into solutions.

## ... and quality products

Having a wide selection of products is vital for best-fit solutions. But having high-quality products with extremely low failure rates is essential for your profitability. Fortunately, Omron gives you both, and sets the standards in reliability and robustness in the harshest of environments.



**SYSMAC**  
always in control



# ... in packaging machinery

<b>HMI</b>	Function-key	Compact	Scalable	Handheld	SCADA system & OPC server
<b>Control</b>	Compact Controller	Modular Controller	Machine Controller	<b>SYSMAC</b> always in control	
<b>Modular I/O</b>	EtherCAT	PROFINET	PROFIBUS-DP	CompoNet	DeviceNet
<b>Modular I/O</b>	EtherCAT	PROFINET	PROFIBUS-DP	CompoNet	DeviceNet
<b>Inverter</b>	JX Up to 1.5 kW	MX2 Up to 15 kW	RX Up to 132 kW	Smart Step2 (Pulse) 50 W to 750 W	G-Series (A/P, MLI) 50 W to 750 W
<b>Robot</b>	G-Series 50 W to 7.5 kW	G-Series 50 W to 15 kW	G-Series 50 W to 15 kW	G-Series (A/P, ECT, MLI) 50 W to 15 kW	G-Series (A/P, ECT, MLI) 50 W to 15 kW
<b>Linear</b>	Accurax GW 26.5 to 348 N	Accurax FW 48 to 760 N	Accurax Linear Axes 48 to 760 N	Delta Robots	Scara Robots
<b>Monitoring</b>	Timer	Counter	Display	On-panel temperature controller	In-panel temperature controller
<b>Switching</b>	Electromechanical Relays	Solid State Relays	Contactor	Circuit-breaker	Phase-loss detection
<b>Sensing</b>	Photoelectric	Oil-resistant	Cylindrical & Fork shape	Black & Colour print mark	Fiber-optic
<b>Vision</b>	Inspection	Positioning	Pick & Place	Distance / Displacement	Width
<b>Safety</b>	Sensor	Emergency stop	Limit switch	Door switch	Relay
<b>Networks</b>	EtherCAT	CANopen	MODBUS	MODBUS/TCP	DeviceNet

*Would you like to know more?*

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