

Meat packaging made 400% faster

With single integrated Vision-Controller-Robot solution

ATRIA SCANDINAVIA
Good food - better mood.

Atria Scandinavia is a company that markets products, meat products, meal solutions and delicatessen products in Sweden and Denmark. As part of the ongoing constant improvement process Atria wish to increase production speed and reduce the need for manual operations.

Challenge

Atria contacted five machine builders and requested proposals for an automatic SRS crate handling-and-loading solution for its end of line material handling section. This would replace the manual handling and substantially increase the speed. However, space was very limited and Atria did not want to rebuild its production facilities. In addition, Atria wanted a very easy way for the machine operator to locate and remove blockages and get the machine back up and running very quickly. Case Link was one of the machine builders contacted by Atria. Case Link partnered with Omron in developing a proposal for a single, compact custom-made machine. This would stack the crates coming from an existing overhead crate handling conveyor and load them with the meat product coming from the upstream packaging line.

Solution

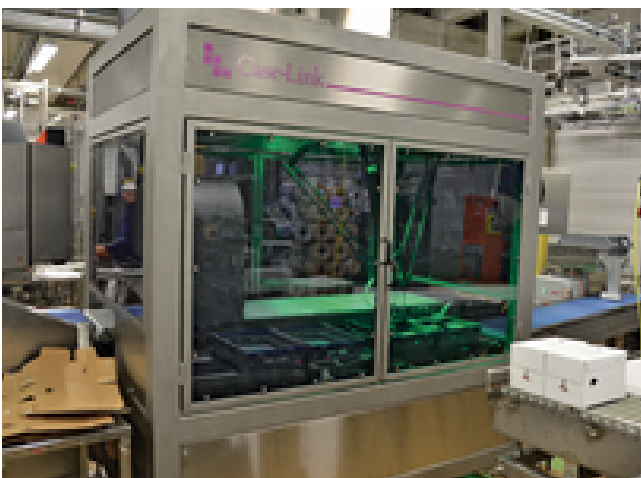
Case Link and Omron won the contract with their "all-in-one solution". All other qualified bidders proposed a two-machine solution which required more space and was less integrated. During the request for tender process, Omron provided much commercial and technical support to Case Link and successfully transferred its expertise to the OEM in the areas of quality and label inspection, robot handling, as well as sensing and control technologies. The Case-Link/Omron partnership resulted in a very compact solution since it integrated all Vision-Controller-Robot-Safety-I/O-Server activities into one network.

The Case Link Omron proposal included four Delta robot cells, each with:

- One network, and one cabinet for Vision-Controller-Robot-Safety-I/O-Servo
- Simplified HMI for "product selection" and "Start/Stop"
- Integrated SRS crate-conveyance control
- One vision system for robot coordinates and quality inspection

One integrated space-saving solution

"All the other suppliers proposed two different machines, one to



Delta Robot with four SRS-Cases inside



Delta Robot with four SRS-Cases inside

handle the SRS crates and another to package the products," says Ulf Svensson, Omron Field Application Engineer. "But our proposal integrates the SR crate handling into our single machine. We lower the crates from the ceiling into the machine using an elevator managed by the machine's control system – so no extra machine is needed and no extra cabinets or cables are required."

Optimised productivity via fast blockage detection

In the event of an alarm or malfunction, the GUI displays a diagram of the machine and highlights the area that needs attention. This enables the operator to locate and clear any blockages and get the machine back up and running very quickly. In addition, the Omron trouble-shooter was built into the machine, which includes explanations of all error codes for all Omron products. And to optimise productivity even further, the GUI is made extra simple - the operator simply selects a product from the on-screen list and presses the "start" and "stop" buttons as required.

FH Vision

The Omron FH Vision system calculates the product coordinates and orientation for the Delta robot, but since this system is highly versatile, it also provides the following quality checks:

- Each package contains product
- Product is folded correct
- Label is correct
- Barcode is on label
- Both location and orientation of each product

After which the Delta robot picks the product and rotates and

places it correctly in the SRS crate

The total solution included four robot cells, each equipped with:

- Sysmac automation platform
- NJ controller
- Delta robot (4 standard G5 servo)
- NS8
- NX-Safety
- NX-I/O
- One integrated software including robot functionality
- EtherCAT as fieldbus
- G5 for one elevator and two conveyors
- FH 1 camera expandable for another camera
- Door switches
- Photoelectric sensors
- Power supplies

Benefits

1. Faster packaging speed - 400% faster
2. Reduced manpower costs
3. Highly compact – robot functionality integrated in logic hardware
4. Improved product quality
5. Fast implementation/installation – 7 months from start to finish

"Thanks to the integration of robot and logic control we have a very compact system and there is no need for a separate robot cabinet," says spokesperson for Atria. "This compactness avoided substantial rebuilding costs and will enable us to recover the investment within two years."

All programming via ready-made function blocks

Using 100% Omron products and services also benefitted the systems integrator Case-Link. "We already had a major advantage with just one integrated software including robot functionality," says spokesperson for Case-Link. "But in addition, the ready-made function blocks made it even easier and we did the entire installation without the need for a robot programmer."

Future developments

Atria is discussing plans for another new end of the line packaging cell in its Malmö plant as well as planning to install similar robot installations across its other six production plants in the Scandinavian region.



Case-Link and Omron a "Total Integrated Solution"

About Omron

Omron Electronics Ltd is a UK subsidiary of the Omron Corporation, a global leader in the field of automation. Established in 1933, Omron has more than 37,000 employees in over 36 countries working to provide products and services to customers in a variety of fields including industrial automation, electronic components industries, and healthcare. Omron Electronics Ltd provides a comprehensive sales and support service for Omron's vast range of industrial automation products including industrial components, sensing and safety, automation systems and drives.

About Atria

Atria Plc is a growing and international Finnish food company. Atria is one of the leading food companies in the Nordic countries, Russia and the Baltic region. Atria's net sales in 2014 amounted to EUR 1,426 million and it employed an average of 4,715 people. The Group is divided into four business areas: Atria Finland, Atria Scandinavia, Atria Russia and Atria Baltic. Atria's customer groups are retail trade, Food Service sector and industry. In addition, it has a Fast Food concept business based on its own brands. Atria's roots go back to 1903, when its oldest owner co-operative was founded.