

Technology to preserve the pleasant smell of coffee

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For its high-quality coffee, Dallmayr's production facilities always have the latest state-of-the-art technology – in the roastery in Berlin the conveying line is automated with Simatic S7-1500 Credit: Siemens AG/W. Geyer

One of the most popular German coffee varieties – Dallmayr Prodomo – is roasted, ground, and packaged in Berlin. To maintain the high quality standard, the producer seeks to ensure that the production facilities have the latest state-of-the-art technology. For this reason, the roasted coffee packaging system is being migrated to Simatic S7-1500.

Retention time for quality assurance

The pleasant smell of coffee fills the packaging facility, where bags are folded, filled, de-aerated (evacuated), sealed, and grouped into containers. The striking conveyor system is the first thing that catches the eye. It conveys the vacuum-packed coffee packages in a serpentine to just below the ceiling, where they are transported at walking speed across the entire hall; then, on the other side, they are lowered back down to working level in serpentine conveyors. The containers are grouped on a cartoning line and further conveyed to the palletizing system using a vertical conveyor provided by Nerak and other conveyors.

Dallmayr entrusted Schäfer Automatisierungstechnik GmbH with the automation of the conveying systems – from packaging to palletizing. CEO Klaus Schäfer explains the unusual arrangement: "It's all about creating retention time. If a bag is not 100 percent airtight, it will have enough time to draw air while it's being conveyed. The bag gets soft and can be sorted out easily." The length of the conveyor thus functions as a quality assurance measure and protects the aroma of the premium-quality coffee.



For ensuring high quality the conveyor system transports the coffee packages in a serpentine across the entire hall and conveys them to the palletizing system. If a bag is not 100 percent airtight, it gets soft and will be sorted out.

Retrofitting ensures supply of spare parts

Finding spare parts for the conveyor controller that was installed in the 1990s was threatening to become difficult, so the company decided to retrofit the facility. Schäfer wanted a future-oriented solution. The project team decided to use a Simatic S7-1500 controller while keeping, or rather migrating, the existing program. Previously, two Simatic S5-115U 943B CPUs controlled the two conveying lines. The distributed I/O systems were connected via an IM 308 from a third-party supplier. The wiring was to be kept but also integrated into the Simatic system. Schäfer decided to use Simatic ET 200S and therefore complemented the Simatic S7-1500 with the corresponding communication modules for Profibus DP.

Converters simplify migration

The team migrated the program in two steps. First, it transferred the conveyor control of the S5-115U to an S7-300 program and then converted it for use with the S7-1500. "The program for this conveying line is not too complicated, which is why we ventured to start the migration here," explains Schäfer. "Success has proven us right. The preexisting converters helped us save time. Today, I can definitely recommend migrating with existing S5 programs, and in the future I will also perform more complex tasks with the S7-1500 and convert existing programs when a retrofit is needed."



The team chose a Simatic TP1200 Comfort Panel to operate and monitor the system. An integrated Profinet interface makes it possible to easily transfer the data to a higher-level system. "That was very important for Dallmayr, because this way the company is prepared to meet any future requirements of the food and luxury food industries, such as batch tracking," says Schäfer.

Cooperation creates synergies

Schäfer Automatisierungstechnik was already a pilot user of Simatic S7-1500. Klaus Schäfer places great value on always offering state-of-the-art technology to his customers. His next commissioning will be in Dubai. This does not make him anxious at all. "We can draw on the competence of Siemens' expert services here in Berlin at any time. That

gives us confidence," he says. Holger Jost, a technical adviser in Berlin, also relishes the challenge: "We are supervising various projects that are being implemented by customers all over the world. We are proud of that, and we get to learn a lot ourselves." This results in synergies for both sides.



Provided by Siemens

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