

Video technology for monitoring dairy operations with audio support.

Leading German dairy company uses IP cameras in its plant to monitor the filling line and outside area.



Organization:
Milchwerke Schwaben eG

Location:
Ulm/Neu-Ulm, Germany

Industry segment:
Industrial

Application:
Process control

Axis partner:
Reimer Elektrotechnik
GmbH & Co. KG

Mission

Milchwerke Schwaben eG, a leading dairy company from Germany, has equipped its plant in Neu-Ulm with several network cameras to monitor production. In addition to securing the plant entrance and delivery zone for simple access control of entry, employees needed to be notified acoustically as soon as any malfunction occurred in the filling line, the valve manifold or a powder silo.

Solution

The solution is based on a combination of high-resolution Axis cameras and speakers that can be operated efficiently and easily using AXIS Camera Station Video Management Software. A precise overview of the valves, pumps and loading systems, as well as the entire production chain, is possible both day and night. An undesired event is indicated using an acoustic alarm signal via the Axis speakers, enabling the employees to react immediately to the situation. The interaction of video and audio in real-time is a key benefit for dairy operations.

Milchwerke Schwaben used the Neu-Ulm-based electrical company Reimer Elektrotechnik as their advisory consultant for the project and chose Axis Communications, the innovation leader in the field of network cameras. Reimer installed a total of 25 network cameras on the company premises, including a multi-sensor camera to cover the outside area and network audio systems in the production hall.

Result

Installation of the solution and commissioning of the network cameras both indoors and outdoors went smoothly. After the first two Axis cameras were installed, additional cameras were gradually added as the benefits immediately became apparent to the management at Milchwerke. The end-to-end solutions from Axis were thereby adapted to the changing needs of Milchwerke. Thanks to the AXIS Camera Station video management system, system expansion with additional cameras or speakers can be implemented easily and flexibly at any time.



Milchwerke Schwaben eG, with its head office in Ulm and its main operations in Neu-Ulm, was founded back in 1922. At that time, some Ulm dairy farmers decided to form a cooperative to be able to produce their dairy products more efficiently as a group. Today, the cooperative has over 900 milk suppliers from the region.

As one of the leading dairy companies in Germany (as of mid-2020), over 180 employees produce an average of 200 tons of yogurt and dessert specialties, 32 tons of butter, 100 tons of cheese, and 61 tonnes of milk and whey powder per day under the brand name "Weideglück". Milchwerke Schwaben processes about 426 million kilograms of milk and whey each year. "Weideglück" products are exported to 70 countries around the world.

High quality and security thanks to network cameras

The plant in Ulm looks back on a long tradition. To keep the quality and safety of their sensitive milk products high and to reduce raw material losses and thereby save costs, Milchwerke Schwaben decided to upgrade its video surveillance both inside and outside the production hall.

As a first step, the plant entrance was equipped with new network cameras to enable number plate recognition of the incoming and outgoing trucks, as damage sometimes occurred as the trucks were being maneuvered. The outside area is now monitored by an AXIS P1447-LE and an AXIS P3719-PLE multi-sensor camera. In addition to the simple and inexpensive installation, the latter offers a good overview of the outside area in several directions – doing the work of four cameras in a single device. In addition to the outside area, the live transmission of images of the filling line was a key point of the installation: Milchwerke wanted immediate acoustic notification as soon as there was any malfunction in the filling line. "We now have 25 cameras in use both inside and out, giving us a full view of the filling line and the intersection leading to the plant entrance," explains Holger Gebauer, Head of the Electrical Maintenance Workshop at Milchwerke Schwaben.

Malfunction in production immediately triggers an acoustic signal

The interior of the plant is covered by two AXIS P1435-LE and five AXIS M2026-LE MK II Network Cameras that monitor the pipeline system. A wide-angle camera, the M2026-LE MK II, is used here. Particular caution is required at this stage of production, as the milk powder is pumped from the trucks into the line at high pressure. The connections, solenoid valves and pumps must all be set correctly. Otherwise large amounts of valuable raw materials could be lost in a short amount of time. That is why the cameras of the milk powder line were connected directly to the audio system – a warning signal sounds immediately if a large amount of dust forms. With the help of AXIS Video Motion Detection 4, the camera detects an undesired event or movement, such as the escape of powder, and then triggers the alarm via a network.

"The advantages of the new network cameras became apparent to us immediately in the truest sense of the word. The videos were clear and details were easy to see. The link between acoustic warning and video was also extremely important to us. Thanks to the great network, which has very low latency times in live transmission, we can optimally monitor production, stop it if necessary, and thus save considerable costs," says Gebauer.

Simple system expansions with video management software possible

The successful interaction of all components – encoder, cameras and audio system – was particularly important for Milchwerke. AXIS P7216 Video Encoder is a key component of the installation, converting images from old analog cameras into a digital signal. This way, Milchwerke can gain all the advantages of IP technology, while still using analog cameras.





While AXIS Companion was used as video management software at the beginning of the project, the system has now been migrated to the AXIS Camera Station (ACS), which runs on a virtual server at Milchwerke Schwaben (thereby simplifying future system expansions). It is particularly important to Milchwerke to have a flexible, expandable system, as new product creations are constantly in development and the systems and processes must therefore be adapted.

All elements of the production line are linked and managed via the AXIS Camera Station. A 55-inch monitor in the operations room shows images from 16 cameras from the various production areas in real-time. An employee keeps an eye on the monitor, as no video recording takes place indoors for data protection reasons. The high-performance AXIS Camera Station also has an intuitive user interface that allows you to react to incidents in real-time. Depending on requirements, Milchwerke can adapt the layout to their daily needs with a live view, site plan, or website display using drag and drop.

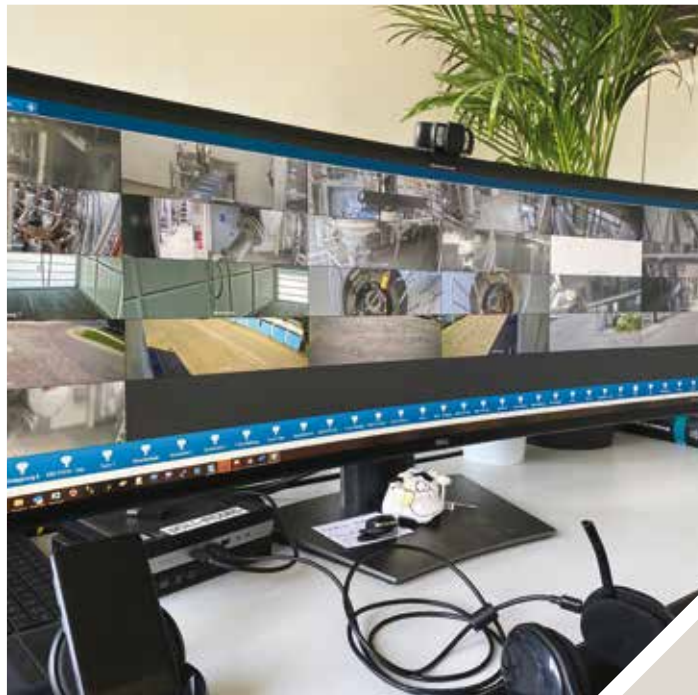
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Efficiency and optimization of operational processes

Reimer Elektrotechnik was responsible for the selection and implementation of the camera and audio solutions, and also handles support and maintenance of the entire system in Neu Ulm. Two employees are permanently assigned to check the machines and adjust and renew the electrical systems there. “We are on-site so that everything runs smoothly, and the machines don't come to a standstill. We also keep an eye on the efficiency and optimization of operational processes, which is one of the reasons why we chose this modern solution for production monitoring from Axis,” adds Marc Klöppel, Master Electrical Engineer at Reimer.

The project in Neu-Ulm began with just a few cameras and a basic system. As the advantages of the new solutions became apparent immediately, cameras, encoders and audio solutions were gradually added. Thanks to the end-to-end security solutions from Axis, these could be seamlessly integrated into the existing systems. Milchwerke thus has a future-proof security system that grows along with their requirements.



REIMER
Elektrotechnik

About Axis Communications

Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, and audio systems. Axis has more than 3,500 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

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