Autoneum throttles up plant safety with intelligent surveillance.

Auto parts manufacturer uses Axis solutions to pump the brakes on property damage while revving up factory safety, security and operations.

Organization:
Autoneum

Location:
Aiken, South Carolina, USA

Industry segment:
Industrial

Application:
Safety and security, loss prevention

Axis partner:
Eli Controls

While Aiken, South Carolina is best known for its equestrian culture and iconic oak canopy that shades the historical downtown streets, it's also home to a newly expanded, world-class manufacturing facility that makes noise and heat-dampening products for the auto industry. The Autoneum factory operates 24/7 customizing carpet systems, heat shields and dampeners for high-end auto manufacturers like Volvo, BMW and Mercedes who demand just-in-time delivery of their orders.

"It's pretty fast-paced," said Chuck Gratti, System Administrator for Autoneum Aiken. "Auto manufacturers don't want to carry a lot of stock. What we ship today will be on their assembly line tomorrow."

Because any disruption to Autoneum production schedule has a cascading effect on its customers, the company invests heavily in the safety and security of its employees and equipment.

In addition to significant investment in employee training and proprietary machinery, the company also deploys a world-class video surveillance system from Axis Communications to oversee operations and mitigate risks.

An ounce of prevention

"Maintaining a safe work environment is critical to our success," said Gratti. To that end, Autoneum turned to Eli Controls, a security systems integrator and Axis partner, to create a network of security cameras to monitor activity throughout the plant.

"If there's an accident, we want to see how it happened," said Gratti. "This helps us learn what we can do to prevent it from happening again."

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Parts and pieces for every need

Eli Controls installed more than 50 Axis network cameras in the 325,000-square-foot building. The surveillance solution included a mix of 1080p HDTV-quality eight-megapixel network cameras, mini-domes, panorama, and bullet network cameras.

"Because Axis offers such a broad portfolio of cameras and mounting options, we never had to compromise. We could always match the best camera with the most-effective placement in each specific area," said Will Litrell, Project Manager for Eli Controls.

The Axis cameras range from fixed domes over doors to 360° panoramic cameras monitoring the factory floor. To ensure there were no blind spots in parking lot coverage, Eli Controls mounted several multisensor panoramic cameras on the building exterior. In small spaces like the break room, Litrell and his team chose discrete, fixed mini dome cameras recess-mounted in the ceiling. Certain areas experience wide variations in lighting, such as the busy shipping and receiving docks, where cameras have to deal with bright sunlight from roll-up doors and shadowy truck interiors. For those locations, the team chose bullet cameras with Wide Dynamic Range, Axis Lightfinder technology and IR filters to deliver exceptional image usability under any lighting challenge.

The cameras are managed through AXIS Camera Station video management software licenses pre-loaded onto an AXIS S20 Appliance, which provides an all-in-one, 12-terabyte network video recorder for onsite video storage. To significantly reduce storage and bandwidth usage, Autoneum uses Axis Zipstream technology, an intelligent compression feature that streams only the important image areas and filters out the rest.

To provide flexible camera oversight, managers download AXIS Camera Station mobile viewing app on their laptops, tablets or smartphones that enables them to securely monitor plant cameras remotely. "We set up a credentialed system, so managers and supervisors can only live view cameras in their area of responsibility, such as maintenance sheds or the factory floor," said Chuck Gratti. "We give certain administrators like Environmental Health and Safety full access to all the cameras as needed."

Protecting emergency exits

To protect against intruders or unauthorized employees entering restricted and potentially dangerous areas, Eli Controls created a solution with Axis network audio devices at emergency exits. AXIS C3003-E Network Horn Speakers emit a tone when anyone opens the door and an associated Axis camera sends a visual alert to the plant manager to verify who it is.

"This process is managed by the rules-based event engine in AXIS Camera Station," explained Will Litrell. "The camera image from the event pops up full screen on the manager's computer drawing attention to the biggest problem right now."

Future plans include installing an Axis door controller with a card reader that will allow authorized personnel to use the door without raising an alert.

"Adding the Axis speakers to the security network allows Autoneum to use them as a paging system as well," explained Will Litrell. "We get some pretty violent storms in Aiken so this gives the company the ability to broadcast emergency weather alerts or any other critical messages to all its employees at the same time."

Holding forklift operators accountable

Autoneum has been particularly focused on monitoring the factory aisles where heavy traffic occasionally leads to accidents. Gratti relates the incident of a forklift operator carrying a wheeled dumpster that had to slam on the breaks when an employee stepped into the aisle unexpectedly. The quick stop caused the dumpster to fly off the forklift and knock over the person.

"When we reviewed the video we realized that if we mandated chaining the dumpsters to the forklift, we could prevent such incidents from happening in the future," said Gratti. It was a simple fix that would have a lasting impact on preventing future injuries.

A total solution for emergency exits: AXIS C3003-E Network Horn Speakers emit a tone when anyone opens the door and an associated Axis camera sends a visual alert to the plant manager to verify who it is.

Gratti also uses the video as a forensic tool to uncover which forklift operator caused equipment damage or hit some electrical lines. "Without the video, we'd never know who was at fault," said Gratti. "Now we can quickly identify which operators need to go through remedial forklift training to improve their safety performance."

Improving emergency response preparations

Gratti also reviews video of incidents to learn how well his response team gets the emergency under control. "When we looked back at the footage of an oven fire we realized that we could have used a few more fire extinguishers in the area," said Gratti.

As a result, management re-evaluated the entire plant and added a dozen or more extinguishers in key locations. "Being able to see how our team acted in a hectic situation led us to improve our overall safety program," said Gratti.

Tracking down shipping discrepancies

Because Autoneum customers rely on just-in-time deliveries, there's no margin for error when it comes to fulfilling orders. So when a customer claimed that a delivery was short, Gratti's team turned to the archived video from the loading dock to determine what had happened.

"We could see our guys physically load the entire truck," said Gratti. "The image was so clear we could count all the racks and confirm the truck had the right amount of materials when it left our facility."

Gratti sent the customer a copy of the video as proof. As it turned out, the error was at the customer's end. Someone had offloaded part of the shipment and moved it to another location in their facility without telling anyone.

Enabling remote troubleshooting

In the near future, Autoneum plans to install Axis cameras to monitor machine performance. Especially in areas where it's not safe for a person to be standing while the equipment is running. "The cameras will let us zoom in for close inspection remotely and routinely check on the health of the system," said Gratti.

In case of a problem, an engineer can watch the live video, remotely troubleshoot the situation and direct an onsite mechanic in real-time on how to fix it. "This will help us greatly minimize downtimes, which is critical in a just-in-time environment like ours," said Gratti.

Planning for the future

As Autoneum becomes more familiar with the business intelligence its Axis cameras provide, it continues to find more opportunities to expand its surveillance network. "We're always identifying more areas where cameras can help us achieve a higher level of safety and security," said Gratti. "Time and again the cameras are proving to be a great investment."

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 3,000 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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