

Customer Case Study

Machine building

Wireless technology improves conveying and other processes for cabinet manufacturer

Summary

- Elkay is a lead innovator in the manufacture of sinks, faucets, and cabinetry, requiring it to use many different machines to make its products
- To make its manufacturing process more efficient, Elkay sought a system that would allow it to automate all of its conveying systems and to generate centralized, remote access to controllers and machine interfaces
- Elkay used Phoenix Contact products such as the FL WLAN 5101 radio to create a profitable solution to its challenge

Customer profile

ELKAY® Elkay Wood Products (www.elkay.com), located in Culver, IN, specializes in several different areas of business. In 1920, Elkay began producing quality sinks. Since then, the company has expanded to manufacture faucets, water coolers, drinking fountains and bottle fillers. In addition, Elkay now offers a cabinetry line, making it a wholesale seller of both commercial and residential kitchen and bath products. Today, Elkay remains the most popular brand of stainless steel sinks worldwide.

Challenge: Large site makes communication difficult

The Elkay manufacturing site is a more than 60,000-square-foot building split up into three different sections: Finish Room, Cabinet Assembly and Pack Line. Because of the large size of the facility, it was difficult for the various sections to connect.

Its goal was to automate all of its conveying systems, as well as the spray booths and heat tunnels used to paint and package products. Elkay faced the difficulty of automating many mechanical processes and setting up centralized, remote access to controllers and machine interfaces in an efficient, cost-effective manner.

Working with distributor Graybar, Elkay realized the potential of wireless systems and found a successful solution to its challenge with multiple Phoenix Contact products.

Solution: High-speed wireless Ethernet

Wireless technology has transformed our world. The demand for mobile communications and computing continues its dramatic growth, driven by the proliferation of smartphones and tablets. The use of wireless in industry continues to grow as well. Wireless technology has been used in industry for many years and has provided reliable communications for monitoring and controlling remote processes.

The solution to Elkay's problem was heavily dependent on new wireless technology. Phoenix Contact products implemented





include wireless products and accessories, DIN rail terminal blocks and fuse blocks, relays, power supplies and UPS, Ethernet communication and connectivity, Trabtech surge protection, circuit breakers and electronic housings. These products were easily interfaced to the existing Modicon control system.

To fix the issue at hand, Phoenix Contact added conveyor control to both the Finish Room and the Pack Line, thereby allowing the two areas to communicate using a Phoenix Contact OMNI Box II with FL WLAN 5101 wireless access points.

Doing so provided roving access as well as central access to all control panels. Additionally, this installation enabled the workers to use iPads to view the HMI's on each unit regardless of their location in the plant.

Next, two large double-door cabinets were designed and mounted using DIN rail terminal blocks and circuit breakers for common automation products. At just 40 mm wide, the FL WLAN 5101 was well-sized to fit into one of the cabinets. This radio now allows Elkay to monitor and configure multiple access points with a network and eliminates the need for network controllers through Cluster Management (CM) technology. The 802.11n feature supports up to 300 Mbps of data passage throughout the product.

For added reliability, TRIO 10 A 24V DC power supplies were used with Trabtech surge protection. Each cabinet includes FL unmanaged Ethernet switches (8-port) for Ethernet connection handling. To avoid interference with the company's existing 2.4 GHz wireless network, the system used the 5 GHz option.

Results: A profitable solution

Looking back on the project, Elkay reported that it was pleased with the broad product selection available as well as the industrial look and feel of numerous Phoenix Contact products. Its IT group liked the documentation and option of using different frequencies for the wireless networks.

Working with Phoenix Contact offered several additional benefits and rewards for Elkay. Using Phoenix Contact products led to decreased hardware, software and maintenance costs and, in turn, increased profitability. Phoenix Contact minimized downtime in the project and provided outstanding technical support in aiding Elkay with cabinet real estate and other facets of the company. Mike Beebe, automation sales engineer, worked closely with Graybar to provide local technical support, including a site survey and tuning of the wireless access points. The customer expressed that Mike was truly informative and very professional.

Overall, Elkay experienced great success in solving its challenge by implementing Phoenix Contact products.

