Solutions in Action

AFA Systems





MK-DLT Delta 3 Robot



Allen-Bradley® ControlLogix™ **Programmable Automation Controller**



Allen-Bradley Kinetix® 6000 Servo Drive





VC-VCA Vertical Autoload Cartoner from AFA Systems

AFA Systems Inc. takes pride in creating efficient and innovative automated packaging systems for manufacturers around the world. Based in Toronto, Ontario, the company manufactures a complete line of horizontal and vertical cartoners, carton and case formers, top- and end-load case packers, robotic systems and more.

The company builds its machines for end users in the food and beverage, pharmaceutical, and consumer packaged-goods industries, and counts some of the world's leading businesses among its customers.

During its 60 years in business, AFA has seen a growing demand for innovative machine design and engineering: qualities reflected in its newest vertical cartoner, the VC-VCA Vertical Autoload Cartoner. While most automated cartoners move across a racetrack that commands a large footprint, the vertically configured VC-VCA cartoner measures just 9 feet long. Its turret is about one-third the size of traditional loading systems.

Yet despite its small footprint, the compact cartoner is a packaging powerhouse, capable of processing 200 cartons per minute while giving operators a better view of the production line than typically offered by horizontal loaders.

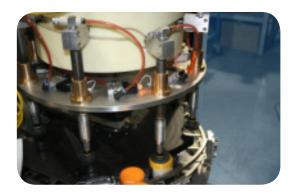
Another new development at AFA is its integrated Delta 3 robot. The robot is mounted above the cartoner and picks off product from a flat conveyor belt. Product placement is guided by a vision system.

"Delta robots have been around for decades, but what makes this one stand out is its customization," said Eric Langen, marketing manager. "We can custom design just about any robotic function for customers because of the standard, robotic-motion software control provided by Rockwell Automation."









Rotary Turret on the VC-VCA from AFA Systems

AFA also meets customization requests because of its large engineering staff. Its mechanical designers and control engineers are experts on industrial automated control systems. AFA's engineers act as project engineers and designers, and have full access to customers. "They understand customer operations so well that they often recommend not only packaging equipment, but efficiency improvements to their cartons and packaging processes."

Since the robot and cartoner share a single control system – an Allen-Bradley ControlLogix programmable automation controller (PAC) from Rockwell Automation – AFA's packaging customers can expect an efficient end-of-line operation and significantly simpler change-outs and servicing.

"Having an integrated platform for motion and machine control – and one programming environment – just simplifies everything," said Langen. "Machine operators can spend less time training because they don't have to learn other software – most already know the Allen-Bradley platform."

The PAC seamlessly integrates with Allen-Bradley Kinetix servo drives, which precisely manage all the cartoner machine's motion axes. A Kinetix servo drive manages high-speed motion synchronization on the Delta 3 robot. "We've really embraced the servo technology," says Langen. "Since these machines rely on servo motors for actuation, with minimal compressed air use, they use significantly less energy."

An Allen-Bradley PanelView™ Plus 600 human-machine interface (HMI) provides a user-friendly interface between the cartoner and operator monitoring the packaging process.

In addition, an Allen-Bradley PowerFlex® 4 AC drive provides end users with a range of communications options, including embedded EtherNet/IP™ connectivity and USB programming, for simpler configuration and startup. As Langen notes, "Because Rockwell Automation systems use EtherNet/IP, we can easily maintain customers' machines remotely using a virtual private network."

AFA sets the quality bar high for their equipment. "Our machines are designed to run at 99.9 percent overall equipment effectiveness," said Langen. "Having a great relationship with Rockwell Automation engineers and support staff makes our systems run that much better."

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