Automation Control for Conveying Equipment
Lower Total Cost to Design, Develop, and DeliverSM Solutions from Rockwell Automation

Advantages

- **Rockwell Automation Integrated Architecture™** system reduces programming time, improves information flow between components, and brings unmatched flexibility to machine design.

- **Easy-to-use, off-the-shelf (OTS) components** reduce time to market and meet end user demands for simplicity and global support.

- **With the introduction of Integrated Motion on EtherNet/IP**, Rockwell Automation becomes the first automation supplier to provide integrated motion control on standard Ethernet, allowing you to use a single network for complete machine control.

- **One development environment** for control, motion, and drives programming reduces development time and cost

- **Extensive offering of Rockwell Automation safety products and services** teamed with our application expertise increases overall equipment effectiveness

- **On-Machine™ products** allow for distributed architectures, reducing panel space, lowering installation time and wiring errors

Overview

Conveyors and conveying systems are key components in many material handling processes. Responsible for moving bulk goods or unit loads throughout a manufacturing or distribution facility, conveyors have a significant impact on efficiently managing product flow and supply chain demands.

If your end users are concerned with improving production and reducing maintenance, incremental gains in conveyor performance, reliability and efficiency can lead to significant cost reductions. In addition, increased modularity and flexibility means easier reconfiguration to meet changing demands and new product introductions.

Since conveyors play a central role in an operation, it is essential that conveying equipment operates with maximum availability and minimum downtime – ensured by global service and parts availability. For end users buying for today’s needs – and tomorrow’s – machine builders can provide the most value from these assets with energy management through sleep modes and automatic variable speed control. Through tighter conveyor control, machine builders can maximize throughput at more efficient speeds.

Rockwell Automation offers a broad portfolio of control and information products, a global service and support network, and a resource-rich network of business and technology partners.
**Challenge**
Inadequate conveying systems can create a bottleneck. For many end users, the differentiator is the ability to deliver quicker than anyone else through highly automated, highly reliable systems. Machine builders can provide those systems through redundant controls and networks supported by off-the-shelf (OTS) components.

For example, efficient conveyor operation can minimize ongoing system expenses and achieve superior reliability at a competitive price – optimizing maintainability without the need for large investments in equipment and design time.

Flexibility is required to meet changing seasonal demands and new product introductions. Machine builders can reduce lead time to build, test, and ship machines and reduce time to market for new machine designs through scalable architectures and On-machine distributed solutions.

While many conveying systems are purchased to meet current requirements, the conveying system should be optimized to handle future needs, with flexible network capabilities built to standards for easy integration with other equipment.

For machine builders who want to provide end users with data to identify trends and opportunities for improvement, an information-enabled architecture improves operational and maintenance alerts, diagnostics, trouble shooting, and parts access for optimal on-demand machine performance that reduces inefficiencies and ultimately saves energy.

**Solution**
Rockwell Automation Integrated Architecture brings together a powerful multi-disciplined control engine, seamless networking, a scalable visualization platform and the information technologies. Unlike conventional control architectures, the Integrated Architecture provides fully integrated, scalable solutions using a single control platform and a single development environment. It allows machine builders to build standardized code with improved access to production and diagnostic information. This helps machine builders shorten design cycles and increase their focus on innovations that lead to a competitive advantage.

The Allen-Bradley® ArmorStart® family of distributed motor controllers provides machine builders with a control solution that reduces installation time and provides flexibility for your system. Zone control capabilities of ArmorStart are ideal for conveyors with built-in DeviceNet communications, DeviceLogix™ technology, and added Zone Interlocking Parameters (ZIP).

When paired with our application expertise, the vast variety of photoelectrics from Rockwell Automation allows machine builders to efficiently solve the most complex conveyor sensing applications; selecting a single provider with global availability allows machine builders to improve reliability.

New developments by Cisco and Rockwell Automation have led to significant advancement in EtherNet/IP for conveying applications. Utilizing dual port switches, linear topologies allow for less wiring while increasing cable segment lengths. Device level ring (DLR) topologies offers resilient single fault tolerant networks to improve reliability.

*Working with Rockwell Automation you can lower your Total Cost to Design, Develop, and Deliver<sup>SM</sup> a machine. This total cost approach solution accounts for all costs of delivering a machine or system to market over a given period of time. It is a final result of the purchase and build costs plus all aspects in the future use and maintenance of the machine components considered.*
Conveying Equipment: Typical Architecture on EtherNet/IP Network

Rockwell Automation solutions deliver improved production capabilities and reduced total cost of ownership by providing unparalleled functionality, flexibility and scalability. Machine builders can respond more quickly to customer or market demands, reduce maintenance costs and downtime and easily gain access to actionable plant and production information for improved management and decision-making.

Conveying Equipment: Typical Architecture on DeviceNet Network