

CASE STUDY



Neuco Conveyor Control System Modernization

Neuco's Bolingbrook distribution facility relied on a proprietary conveyor control system that limited visibility into operations and restricted the ability to make changes within the system. Conveyor behavior, device logic, and operational data were managed through third party software that only the vendor could access or modify. Even small adjustments required formal change requests, often resulting in delays, increased costs, and extended downtime when troubleshooting was needed.

LD Systems evaluated the system architecture and replaced the proprietary control environment with an open, industry standard PLC and warehouse control system platform. The new system provided Neuco with direct access to operational data, greater flexibility to modify conveyor behavior, and a scalable controls architecture designed for long term system management and expansion.

The Client

Neuco is a leading distributor of HVACR parts and equipment, supplying contractors and service professionals across North America. Its distribution operations depend on highly reliable conveyor and sorting systems that support fast order processing and accurate product routing throughout the facility.

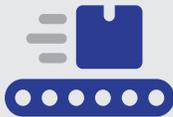
Results Snapshot



Implemented open industry
standard PLC based
architecture



Operational and history data
through SQL databases



Real time adjustments
to conveyors



Improved troubleshooting
capabilities

THE CHALLENGE

Neuco's conveyor system operated through proprietary third party software that limited operational visibility and restricted the ability to make system changes internally.

Conveyor controls were managed through a closed, vendor controlled system.

The proprietary software environment allowed only the original vendor to access or modify the control logic. Any adjustments to conveyor behavior or connected devices such as scanners, diverts, merges, transfers, or print and apply systems required formal change requests to the vendor.

Even minor system changes could require significant time and cost.

Routine updates or operational adjustments often involved long lead times and service fees, reducing Neuco's ability to respond quickly to operational needs or performance issues.

Limited visibility into operational data made troubleshooting difficult.

The existing system relied on a text file data interface with limited access to detailed operational history or system diagnostics. When problems occurred, identifying the root cause required involvement from the third party vendor.

Dependence on external resources reduced operational flexibility.

Without direct access to system controls or data, Neuco relied heavily on the vendor for troubleshooting, adjustments, and ongoing system support.

RESULTS

- Replaced proprietary conveyor controls with open industry standard PLC based architecture
- Provided direct access to operational and history data through SQL databases
- Enabled real time adjustments to conveyor speeds, device behavior, and routing logic
- Improved troubleshooting capabilities and reduced vendor dependency

THE SOLUTION

01



Operations Review

LD Systems evaluated the existing conveyor control architecture, system interfaces, and operational requirements to identify the limitations created by the proprietary control environment.

02



Controls Architecture Design

A new control system architecture was developed using Allen Bradley PLCs and an open warehouse control system platform designed to replace the vendor controlled software environment.

03



System Implementation

The project included installation of new PLC based conveyor controls, integration with the nMotion warehouse control system, and implementation of SQL database driven data management to support routing, messaging, and operational history.

04



Project Management and System Integration

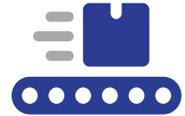
LD Systems coordinated engineering, controls development, testing, and system commissioning while ensuring integration with Neuco's warehouse management system and existing facility equipment.

ENGINEERING THE SOLUTION

Open PLC Based Conveyor Controls

LD Systems replaced the proprietary third party control system with an open controls platform built around Allen Bradley PLCs.

The new architecture provides direct control of all conveyor zones and field devices including scanners, diverts, merges, transfers, and print and apply systems. Conveyor speeds, device behavior, and routing logic can now be modified directly within the PLC programs, allowing adjustments to be implemented quickly and tested in real time.



This open controls platform removes dependence on proprietary vendor software while providing a flexible and maintainable foundation for ongoing system operation.

Data Visibility and System Integration

The upgraded system introduced a database driven control environment using SQL databases and the nMotion Manager warehouse control system.

The new architecture enables direct visibility into operational data, routing decisions, device events, and historical system performance. Neuco can now monitor conveyor operations in real time while maintaining access to detailed operational history for analysis and reporting.

The system also integrates directly with Neuco's warehouse management system through SQL based data exchange, supporting routing instructions, label generation, weight and dimension handling, and confirmation messaging between systems.



CONCLUSION

By replacing the proprietary conveyor control environment with an open PLC and WCS architecture, LD Systems provided Neuco with significantly greater visibility, flexibility, and control over its material handling operations.

The new system allows Neuco to modify conveyor logic, device behavior, and routing decisions without relying on vendor intervention, reducing lead times for operational changes and improving troubleshooting capabilities.

With direct access to system data and a scalable controls architecture in place, Neuco's Bolingbrook facility is now positioned to support future automation improvements while maintaining full control of its conveyor operations.