

Project Profiles

Distribution & Conveyor Systems



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PLC Upgrade to a Distribution Center

Description:	The two SLC-5/04 PLCs were replaced with a ControlLogix processor and five DeviceNet bar code scanners were replaced with EtherNet I/P scanners. The entire upgrade occurred over a weekend with no effect on the normal operation of the facility. The changes allowed faster processing of the bar code information and increased the system capacity.
Hardware:	Allen Bradley ControlLogix with three DeviceNet networks, one Remote Rack (one of the original SLC 5/04 I/O racks), one 5/05 communicating I/O over EtherNet I/P, and two Ethernet/IP networks. The bar code readers are communicating over the EtherNet I/P.
Operator Interface:	The local control uses a couple of PanelView units and the system is monitored using a FactoryTalk node. Status points are sent to an SQL database for future analysis.
Engineering Activities:	System Design, PLC Programming, Start-Up Assistance, System Troubleshooting and System Documentation. Ladder Logic programs were converted, documented and updated.
System Documentation:	Control Description and Software Documentation for the PLC and Operator Interface programs.



Army Depot Distribution Center

- Description: A new tote based conveyor system was added to a warehouse in a military supply depot. The new system is used to route materials to containers for packing.
- Hardware: Allen Bradley 5/25 PLC which communicates with the DTAM+ keypad and message unit.
- Operator Interface: The new control panel used an Allen-Bradley DTAM+ to allow the operator to route totes to the proper packing location. Totes are recycled as sub-assemblies are produced. The system was designed so that a Bar Code reader can be easily added in the future.
- Engineering Activities: PLC Programming, Start-Up Assistance, System Troubleshooting and System Documentation. Ladder Logic programs were completely documented and updated along with the DTAM+ configuration
- System Documentation: Control Description and Software Documentation for the PLC.



Modifications to a Palletizer Feed System

Description:	The existing palletizer feed system PLC program was modified to double the number of lines feeding the system. The boxes are accumulated in sufficient numbers to fill an entire pallet level. Up to sixteen different pallets can be in progress at the same time. The system automatically tracks boxes throughout the system.
Hardware:	Allen Bradley 5/25 PLC which communicates with the Allen Bradley 2/30 PLCs for the palletizers.
Operator Interface:	The existing PanelView 1200 was modified to allow the operator to control the system.
Engineering Activities:	PLC Programming, Start-Up Assistance, System Troubleshooting and System Documentation. Ladder Logic programs were completely documented and updated.
System Documentation:	Control Description and Software Documentation for the PLC and the PanelView.



Modifications to a Distribution Center

Description:	The existing system was rebuilt to increase warehouse size and quantity of shipping lanes. The system supports 4 consolidation zones and 26 separate shipping lanes for a Nationwide Electrical Components distributor. The warehouse utilizes two levels of component storage and a computerized tote distribution system.
Hardware:	Allen Bradley 5/25 PLC which communicates with the InterMAC bar code reader network (17 readers) via a dedicated ASCII module.
Operator Interface:	The existing control panels were re-programmed to control the revised system.
Engineering Activities:	PLC Programming, Start-Up Assistance, System Troubleshooting and System Documentation. Ladder Logic programs were completely documented and updated.
System Documentation:	Control Description and Software Documentation for the PLC.

