

Backhoe Manufacturer Implements Wireless Technology

Industry: Industrial Automation & Manufacturing
Product: 2.4 GHz, Short Range Wireless I/O Module

• The Challenge

A manufacturer of "Green" agricultural, commercial, consumer, construction and forestry equipment used Automated Guide Vehicles (AGVs) to move backhoe units from station to station along an assembly line. The system used wired, serial communications to guide the mobile AGVs along a magnetic path in the floor. But there was no direct communication between the AGVs and the PLC that controlled the manufacturing processes. As a result, an AGV that was approaching a station could run into another AGV if that AGV had not yet moved on.

Quality control was limited to station-to-station. Employees had to physically walk around and observe processes directly. Quality control processes and build times were suffering.

• The Solution

Installing B&B Electronics Zlinx® I/O products gave the plant PLC the ability to track the AGVs. The overall process is maintained by a single remote group. On the AGVs, two Zlinx I/O modules configured in wire replacement mode send discrete wireless signals to the control center. The bidirectional communication capability of the wireless modules not only allows the PLC to monitor backhoe position and status alarms, it also lets the PLC send critical emergency stop commands.

• Why B&B Electronics?

By adding wireless monitoring and control with Zlinx I/O products, quality control was improved and manufacturing lead times were reduced. The customer produced more backhoes with, less production backlog at a lower cost.

The Zlinx product used wire replacement of I/O signals through a matched pair of I/O modules without the need for expensive gateways. Bi-directional I/O mapping was essential for this application to exchange status and control information from the PLC to the backhoe AGV control.

• The Product

Zlinx® Model ZZ24D-NB-LR – 2.4 GHz, Short Range Wireless I/O Module

- Expandable, modular design
- Modbus compatible
- Failsafe programmable output states
- Industry leading low latency to the order of 20 ms
- Industry standard AES encryption
- Wide operating temperature range (-40 to 85°C)



ZLINX®
Model ZZ24D-NB-LR