Application Story

Black & Decker chooses Unitronics Vision280™ HMI+ PLC

Black & Decker uses Ethernet and MOBUS to control a new automated holesaw fabrication system.

Black & Decker is the world's largest producer of power tools and accessories. Among its manufacturing facilities is the Riverview factory in Florida, supplying saw blades for the accessories division.

Preparing its facilities to predicted future growth, B&D decided to design a new automated holesaw fabrication system—a unit which takes rolled and formed holesaw bodies, pre-made cap pieces and welds the seams into a completed saw. Capacity was to be increased to accommodate both present and future growth in demand. Naturally, reduced costs were required of the new design as well.

Communication requirements

The new system, based on distributed-control architecture, required interfacing with servo drives, conveyor drives, remote I/O, and multiple robots. Unitronics' Vision280™ integrated PLC & HMI was chosen as equal to the task.

MODBUS was the main communication protocol; both MODBUS IP and serial MODBUS ran via the controller's Ethernet and serial ports.

Built-in Ethernet allowed simultaneous, high-speed connection to multiple robots for transmission of part data, reading robot status, and manipulating on-board robot I/O.

Connecting one of the Vision280™ serial ports to external remote I/O reduced wiring time to a tremendous degree. The second serial port was dedicated to swift and accurate control of multiple servo drives.

The distributed-control architecture greatly reduced wiring and construction time, while providing exceptional flexibility during development and testing.

Built-in HMI

As a bonus, the Vision280's™ built-in touchscreen HMI serves as an advanced maintenance terminal for monitoring communications performance. Having the panel as an integrated part of the PLC allows it to easily draw the relevant data from the system.

Successful Project

Timothy Moulder, Black & Decker's engineer responsible for the design and construction of the controls for the new holesaw fabrication system, underlines communication options as the main

criterion for choosing the Vision280™, specifically Ethernet and MODBUS. "Without fast, reliable, simultaneous connectivity to multiple robots, the application could not have succeeded" he says.

B&D Riverview uses Unitronics controllers exclusively in all of its original machine builds and retrofits. "I've not yet encountered a job that a Unitronics PLC was unable to cover" says Moulder.

For more information, please visit www.unitronics.com.