



PC-based control in rotary printing presses

Huafeng Printing Machine relies on PC- and EtherCAT-based control technology for advanced printing solutions

Huafeng Printing Machine Co. Ltd. is specialized in the production of printing and packaging machines. The company is located in Jiangyin City in China's Jiangsu Province. Founded in 1998, Huafeng develops advanced rotogravure printing and dry-laminating machines. Huafeng has just recently applied a Beckhoff control solution in its 10-color direct-drive rotogravure machines used in packaging applications. Huafeng machines can print on all types of film, and consist of wind/unwind units, infeed units, inking units (up to 10), roll changers and a heating system.



Huafeng Printing Machine Co. Ltd. currently uses a Beckhoff control solution in its 10-color rotary presses for printing materials used in packaging

"PC-based control technology gives us a competitive advantage," explains Hairong Wu, Huafeng's technology director, before listing the various advantages of PC-based automation: "HMI, motion control, media tension control, temperature control and color print mark registration are seamlessly integrated into the PC-based control platform, running on a single CPU with TwinCAT as the universal automation software. This allows us to print within tolerances as small as 0.1 mm and a speed of 330 meters per minute with 10 colors. This high level of performance is based on, among other things, the enormous processing power of the PC, fast EtherCAT communication and the high-performance AX5000 Servo Drive motion system."

Highly accurate print mark registration with EtherCAT

To achieve an exceptional level of accuracy and speed in print mark registration, Huafeng has developed a print mark sensor

with its own EtherCAT interface that communicates directly with the controller. The algorithm for the print mark registration is implemented in the TwinCAT PLC. "This increases the machine's speed and reduces waste significantly," the technical director explains. "We are considering the implementation of eXtreme Fast Control (XFC) technology from Beckhoff in the future to better detect print marks and other signals."

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