

PC- and EtherCAT-based control technology in the post-print industry

Fast and highly accurate processing of signatures

Precision, speed and efficiency are critical in the printing industry and for related equipment suppliers in the marketplace. With its A10 stacker for processing folded signatures, machine manufacturer MBO was able to meet the highest stacking requirements with integrated, modular and highly scalable PC-based control technology from Beckhoff.



Powerful control and drive systems in the A10 stacking system provide effortless machine operation by a single person.



The customized user interface provides simple, context-based operation.



The CX2030 Embedded PC and TwinCAT 3 software form the core of A10 stacker's automation solution.

MBO Maschinenbau Oppenweiler Binder GmbH & Co. KG, based in Oppenweiler, Germany, has been active in the binding and print processing field for over 50 years. The company's extensive expertise is readily apparent in its new A10 signature stacking system with a horizontal layout that makes it possible to process folded signatures quickly and effortlessly with only a single operator. According to MBO, "The signature bundler is designed for quick and easy training and operation, as well as for high processing speeds. Furthermore, the high quality of the resulting bundles of compressed signatures (folded printed sheets), including automatically inserted boards, offer further advantages in the following process steps of the workflow."

One system for automation, control and measurement technology

According to MBO, the high performance of the new stacking system is enabled to a large extent by its control technology, which is entirely PC-based. "From the start, our choice of PC-based control technology for the automation of our machines was based on the comprehensive product portfolio from Beckhoff, which ranges from I/Os to drives and features a single software platform for engineering and runtime – TwinCAT. Moreover, the globally-available Beckhoff technical service is very important to us."

The comprehensive Beckhoff system provides numerous benefits besides high performance, as MBO confirms: "The openness and modularity of PC-based control is a prerequisite for efficient machine development because it minimizes the effort to add new components and functionalities. The Beckhoff EL3356-0010 EtherCAT Terminal with eXtreme Fast Control technology (XFC) provides exceptionally high precision in the signature stacking process, because it seamlessly integrates advanced measurement with oversampling technology into the control system. Another example is the drive technology, where the AX5200 Servo Drives series enable fast and highly dynamic positioning performance. Furthermore, the AM8000 series servomotors feature One Cable Technology (OCT), delivering significant speed and space benefits while ensuring much easier installation."

The CX2030 Embedded PC from Beckhoff, featuring an Intel® Core™ i7 processor (dual core, 1.5 GHz) and TwinCAT 3 software, provides high computing power at the core of the A10 stacker's automation system. A built-in multi-touch CP2916 Control Panel with a 15.6-inch screen, an illuminated-ring keypad and an emergency OFF button ensures convenient operation. Three AX52xx 2-channel servo drives with an AX5801 TwinSAFE option card provide safe motion control in combination with AM8000 and AM8500 servomotors that offer increased rotor moment of inertia.

In addition to a host of EtherCAT Terminals, MBO selected machine-mountable EtherCAT Box modules that comply with the IP 67 protection standard. "We always try to collect as much I/O data locally as possible. This reduces the space requirements in the control cabinet and simplifies wiring processes. For the A10, we use the EP1018 and EP2028 8-channel digital I/O Box modules, as well as the EP5151 incremental encoder interface."

Further information:

www.mbo-folder.com

www.beckhoff.com/print