Enhance Machine-Control Systems

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Today’s machine-control systems with programmable automation controllers (PAC) and servo drives have capabilities that enhance their usefulness in the manufacturing environment.

Here are several examples:

- Ethernet-based communication allows the drives to report status and operation information to the PAC allowing it to modify drive operation as needed to keep the machine running at optimal levels. For instance, the slowing down of the machine due to unexpected mechanical load problems, and at the same time notifying the factory information system through an Ethernet bus of the need to perform machine repair or maintenance.
- With online programming, changes to the machine’s operational program can be made without stopping the machine, thus keeping the factory running while machine improvements are made.
- During development, simulation software can be used to test machine code thus lowering the amount of time the machine is on the factory floor prior to being placed in production.
- Some products contain web servers for easy access to operational information.
- The ability to program in one of multiple standard languages (IEC 61131-3 standards) — one of which most users are more likely to be familiar with will lessen development time.

- Better resistance to electromagnetic interference through smart circuit and package design allows PACs and drives to be placed in more electrically, noisy factory environments without adverse operational effects.
- Shorter time-to-replace parts due to online configuring of components through the Ethernet-based interface.
- Higher production rates through the use of higher performance internal processor and deterministic bus networks, such as EtherCAT, that enhance high speed control.

With such capabilities, the overall cost of implementing and maintaining a machine control system, as well as the investment payback time, can be significantly reduced.

A good illustration is with Kollmorgen's AKD servo drive and the AKC controller, which are integrated in the Kollmorgen Automation Suite. This system solution enables the designer to realize the above capabilities to build high-performance machines faster and lower costs.

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