

Q&A

Automation Trends for Packaging OEMs

Andy Hansbrough of Kollmorgen offers insight into the technologies driving new packaging machine designs.

BY AL PRESHER, CONTRIBUTING EDITOR

DN: What are the biggest challenges faced by OEMs today in packaging machinery development?

AH: The focus for OEMs is machine performance and how solutions can provide quantifiable benefits in terms of product per unit time and throughput. That means lower scrap rates, easier set-up, less downtime and more availability. Another focus is the product quality and the much tighter tolerances required to produce a quality product the first time.



Andy Hansbrough

For example, We have a customer packaging medical test strips that diabetic patients use to measure their blood sugar. The strip itself has an electronic circuit and is produced at up to 1,800 a minute or 30 strips per second. This example is illustrative of the demand not only for how many products can be produced and how fast, but that there is also no margin for error.

DN: What automation and control technologies are providing the most effective solutions for these demands?

AH: When it comes to packaging machines, motion matters. Increasing throughput will always demand the best in motion performance. With the diabetic test strips, success is linked to how the motion part of the automation system is managed.

Motion is a big piece of the automation system, but what's also important is the way in which the automation system is implemented. An automation controller, which is typically a soft PLC engine, has to be tightly coupled with the motion engine. We are seeing an increase in systems where the motion engine and soft PLC engine are integrated into the same platform. In the past, you would typically have

a hardware PLC and a dedicated discrete motion controller. But now the time lag in passing information between the automation controller to control the process and the motion controller for implementing that as a motion equation is simply not there anymore.

I would also say there's an impact from IEC 61131-3 developing as the soft PLC standard. More and more OEMs can't afford to support different discrete languages. Tools like PLCopen help create a common platform, and make it easier for the OEM to bring machines up-to-speed within days instead of weeks.

DN: How are these new controls technologies driving the design of new packaging machines?

AH: I would say we've seen one lead the other, with the need for machines to become more complex being enabled by controls technology. Plus there is a big need to connect multiple motion devices using networks.

To put it simply, there is a greater need for machines to do many more functions. Today's packaging processes go from handling a box full of multiple packages to processing individualized products at the other end with the labels and bar codes applied through a singular, very complex process. This put a clear burden on the OEM packaging machine builder to select automation and control solutions that run at a very high speed and tight tolerances, but are also very easy for the operators to run.

DN: What new trends do you see coming for packaging machinery design?

AH: We are hearing about materials changes coming from Wal-Mart's green initiative and

other trends that are injecting more complexity into the way machines operate. The big focus is on packaging material reductions and how to produce the same product using less packaging material. It sounds easy, but it is complex to manufacture products at the kinds of rates needed, while at the same time reducing use of the packaging material. And as the packages get smaller, they are moving faster and, with certain food products, you have to handle it carefully or you'll break the product.

DN: How is use of networking impacting packaging machines?

AH: We're seeing OEMs moving to Ethernet-based networking such as EtherCAT, EtherNet/IP, Profinet and CC-Link. The drive behind this is the need to interface with factory level automation and ERP systems. The goal is to have common types of networking platforms that can easily exchange data. For equipment manufacturers like us, we're moving in the same direction toward Ethernet-connectable devices so that we can harness connectivity on the machine and exchange far greater amounts of data.

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