

Technology Brief

Q & A Format

REDUCE DEVELOPMENT COSTS, SIMPLIFY INTEGRATION AND IMPROVE PERFORMANCE OF PACKAGING MACHINERY WITH AKD® PDMM

“AKD PDMM combines a high-performance multi-axis motion controller, complete IEC61131-3 soft PLC, EtherCAT® master, and AKD® servo drive in a single, compact package. This enables OEMs to lower machine costs, reduce panel space by 50% or more and simplify wiring and integration, while increasing system flexibility, scalability, and motion performance. The result is a complete motion and machine controller solution,” says Reid Hunt, Product Manager.



Kollmorgen's AKD®PDMM Named a Best New Product Finalist by Design News

What is the "standard" approach that the product replaces or improves upon?

The standard approach is to utilize more devices, including the use of a separate PAC to get the machine/motion control into a machine. With [AKD PDMM](#) machine builders get a two-for-one, as the multi-axis machine/motion controller is inside the servo drive. This saves space and cost, reduces the level of integration and eliminates the need to wire another object into the panel.

How does the product reflect changes and trends in this specific technology and in the packaging industry in general?

Everything is getting smaller and more integrated. That is a common trend in the packaging industry, and one that is also reflected in the entire technology spectrum. The fact that AKD PDMM has a high level of integration also reflects the trend to make things simpler. Things don't automatically gain simplicity and



ease-of-use just because they are integrated, but integration usually leads the technology creators to ask themselves, “now that I have put all of these things together, it is apparent that I need to make it simple to use.”

Suppliers can no longer hide behind the guise that they are just making a component, and all the other components are up to the machine designer

and builder to figure out. So because Kollmorgen has a motion/machine controller embedded into a servo drive, we knew that we had to make that connection simple to utilize.

For instance, when AKD PDMM is connected to several other servo drives or I/O modules it automatically recognizes itself and the other servo drives on the network. The machine builder then just maps them to the physical axis name and they are on their way.

There are other interfaces that we have made easier as well. All modern packaging machines have an HMI which runs a visualization program for the user to interface with the machine. HMIs run their own programs which are created with a graphical programming environment. With our HMI we integrate that environment into [Kollmorgen Automation Suite™](#) development tools, meaning that the variables in the machine program are automatically realized by the HMI for easier programming.

How does the product directly and indirectly benefit a packaging operation? (e.g., efficiency, productivity, cost reduction, information management, etc.)

Reducing the time needed to integrate the control system saves the OEM engineering time when creating the machine. The small size of the AKD PDMM (and also the accompanying [AKD servo drives](#) in a multi-axis system) can also help OEMs make a smaller machine. The smaller panel is also less expensive. Additionally, a smaller packaging machine takes up less floor space for the end-user, which can reduce costs as well.

We also have tools for the machine end-user or maintenance group. An automatic backup and restore feature enables maintenance personnel to change out servo drive with zero configuration needed. The information is centralized in the AKD PDMM and automatically downloads to the slave drive. If the AKD PDMM is changed out an SD card can be swapped into the unit. No PC software or keypad programming is needed to configure the machine in a replacement or preventive maintenance situation which can

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significantly increase the uptime of a packaging line. We commonly hear this referred to as “the third-shift paradox,” where the unexpected happens on the third shift when most companies are running it with limited support. These tools were developed with this in mind.

Kollmorgen also has a web-server that enables operations or engineering personnel to check the status of a machine on any web browser. Users can connect to the AKD PDMM and get the status of the controller with any internet-connected device (*iPhone, Android, PC, Mac, Blackberry*). Users can stop and restart the machine, and check on the status of each axis, online. Users can also command the backup and restore functions from this web server.

What is required to implement / use the product, and what kind of support is available?

To implement and use [AKD PDMM](#), knowledge of industrial PLC programming or motion controllers is suggested. Kollmorgen utilizes the IEC-61131-3 standard of programming languages and PLC Open for motion, so whether machine builders are more comfortable with ladder programming, structured text, or any other IEC-61131-3 language, they are able to build machines utilizing AKD PDMM.

Support is built into the development software, with an integrated searchable “help” system that explains all the functions that machine builders might need to use. All Kollmorgen products, including AKD PDMM, are supported by skilled application engineers.

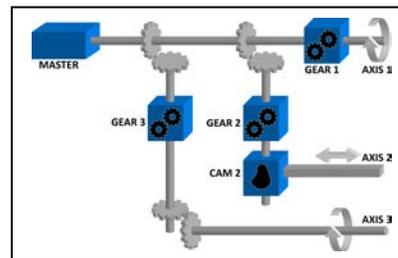
We routinely train machine integrators at our headquarters, or on-site at distributor, integrator and, in some cases, end-customer locations. Kollmorgen is

also routinely involved in on-site machine startups for our customers. We even have a [Kollmorgen YouTube](#) channel that features short videos on how to use and get the most out of Kollmorgen products. Kollmorgen provides support in every way possible.

What issues should packaging manufacturers and / or users consider in evaluating these types of products for their applications?

They should consider whether or not the equipment manufacturer is listening to their input and is willing to help them achieve their goals. Consider that many automation equipment manufacturers are using only “pre-engineered” products, so if it does not do what is needed they are stuck. This is especially painful when a packaging manufacturer is trying to continually

improve and adapt the machine to meet evolving needs.



Pipe Network™ concept through mechanical analogy

Kollmorgen consistently updates our product capabilities with software updates. These may be

tailored to a specific customer request or set of customer requests that we see come up in a specific market or application. Many of our software tools like [Pipe Network](#)™ are the backbone of a differentiated process or throughput improvement in a machine design. These tools are continually improved to provide resources that enable OEMs to create and develop inspired engineering solutions.

ABOUT KOLLMORGEN

Kollmorgen is a leading provider of motion systems and components for machine builders around the globe, with over 70 years of motion control design and application expertise.

Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For more information visit www.kollmorgen.com, email support@kollmorgen.com or call 1-540-633-3534.