Solutions for Packaging & Converting

IEC 61131 Integrated Machine and Motion Control

KOLLMORGEN™

Solutions by DANAHER MOTION

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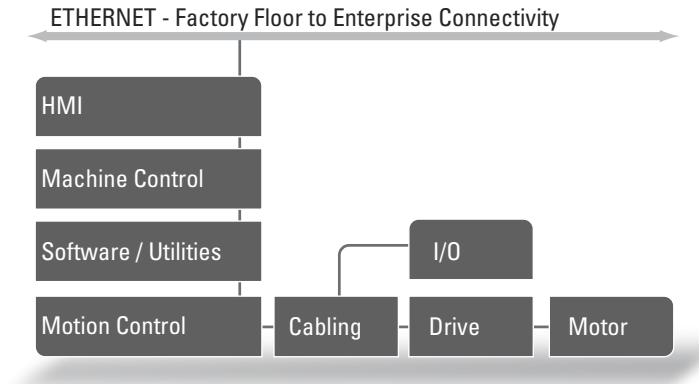
IEC 61131 Solution Set

A powerful solution for factory automation applications where performance, ease of use, interoperability and extensibility are critical.

The IEC 61131 solution set is designed for factory automation applications including packaging, printing, converting, industrial robotics, and textile production. Danaher Motion helps customers worldwide build better machines faster by uniquely offering the entire electromechanical spectrum for motion control from advanced software algorithm development to precision mechanical components. The building blocks are designed to work together as an integrated architecture which can form the basis of your next generation machine, and beyond.



Putting it all together into one convenient solution set

IEC 61131 Programming Software & Tuning Utilities

Integrating machine logic and motion control is a key in reducing application effort and cost. The core of the IEC solution is PiCPro programming software. PiCPro provides ladder logic programming for machine control, function block programming for motion control and structured text programming for high level operations, all in a fully-integrated environment. Based on the IEC 61131 standard for programming languages, PiCPro provides a rich standard instruction set with all the tools you'll need to solve your entire machine and motion control application.

IEC 61131 & Tuning Utilities

Tools for the application engineer include over 200 standard functions, the ability to develop your own functions as well as time-tick, event-driven and servo-synchronous tasks. Tools for maintenance include program logic animation, on-line edit of motion and logic instructions, variable forcing, and view lists. Servo tuning and view are built into the PiCPro environment to simplify start-up and maintenance.

Using universally understood ladder logic for machine control complemented by powerful function block and structured text programming for motion control, PiCPro provides the simplest yet most powerful tool for solving your motion application.

PiCPro's motion control capabilities include linear and circular interpolation, positioning, indexing, gearing, and cam profiling. Solve applications such as printing, packaging and converting using the complete master/slave motion instruction set.

Sophisticated continuous registration algorithms will adjust your motion profiles providing quality production at all machine speeds. For metal-cutting, welding, pick-and-place and glue-laying, use the interpolated motion instructions.

Industrial HMI

Packaged Controller & Drive

The field-installable Digital MMC Control card resides in a MMC Smart Drive and controls up to 16 axes. In addition to the control's on-board I/O and the I/O on each drive, the Digital MMC includes support for a distributed Block I/O network. An Ethernet 10/100 BaseT port is provided for plant network communication, remote programming, and diagnostic information. A serial port is provided for HMI connections for complete machine control. A tag-name database scheme is used for communication to the IEC solution set's Cimrex and Exter HMI terminals.

Integrated Controller & Drives

The Digital MMC resides inside the first drive in the system. Additional drives are daisy-chained together with a simple RJ-45 connection. The network has been optimized for fast transfer of real-time drive data and I/O status which makes it ideal for high performance multi-axis applications. A single-point connection from the first drive to PiCPro provides access to all of the drives on the network for commissioning and tuning as well as application programming and maintenance. Configuration parameters can be sent

to all the drives on the network at once with a single click of the mouse.

The MMC Smart Drive servo amplifiers provide 0.5kW to 24kW continuous output power in a compact, easy-to-apply package. Available in both 230VAC and 460VAC systems, MMC Smart Drives operate over a wide line voltage range.

Cabling & Connectors

Wiring is often a very time consuming process coupled with intensive installation troubleshooting. Convenient break-out boxes and pre-packaged cabling simplify machine wiring and help speed machine development and design. The digital link that connects controller to drives is a single CAT5 cable that allows for drastically reduced wiring and greater flexibility around the architecture of your machine. Standard cable assemblies for both drive connectivity and motor connections include 3, 9, 10 and 30 meter lengths.

Bundled Cabling & Break-Out Connectors

AKM Servo Motors

Kollmorgen AKM Servo motors give you unprecedented choice and flexibility. AKM high performance motors offer a wide range of mounting, connectivity, speed, and feedback to fit your specific application needs. They deliver smooth performance, extremely high torque/density, and high acceleration. AKM Motors are available in a variety of windings designed for virtually any global voltage.

AKM Motor Line

AKM Features:

- 7 frame sizes
- Speeds to 8,000 RPM meet high speed application requirements
- Operation from 53 to 480 VAC, 75 to 680 VDC bus rated provides full range of global voltage capability
- Choice of resolver, commutating encoder, or sine encoder feedback to meet broad drive and system requirements
- Compact (high torque/volume ratio) for maximum torque in minimum space

Direct Drive Servo Motors

Danaher Motion pioneered the development of direct drive technology. Today, our Kollmorgen Direct Drive Rotary (DDR) products offer flexibility and choice for a variety of machine design needs. Choose between Kollmorgen Cartridge DDR Motors or GOLDLINE® DDR Motors. DDR Motors bring you high performance, zero maintenance, clean mechanical assembly, improved accuracy, higher throughput, better reliability, and smooth, quiet operation.

Cartridge DDR Motors

DDR Features:

- 3 Frame Sizes
- 51 lb-in to 3,000 lb-in continuous torque
- 230 VAC and 460 VAC windings
- Supports ABS Feedback Devices

CDDR features:

- 2 Frame Sizes
- 398 lb-in to 3,761 lb-in continuous torque
- 230 VAC and 460 VAC windings
- Supports ABS Feedback Devices

Block I/O Modules

Applications requiring modular and higher count I/O are easily expanded using Block I/O. A simple four-wire connection provides access to up to 77 I/O blocks that can be mounted locally or up to 200 feet apart. Select from a wide array of Block I/O modules including discrete, analog, and motion I/O.

Block I/O Modules

24/7 Global Support

At Danaher Motion we understand what it takes to help you build a better machine faster. That's why our qualified engineers are available to assist you 24 hours a day, 7 days a week, 365 days a year.

Addition support resources including Motion Solutions sizing tools can be found online at: **www.glcontrols.com**

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Motion Solutions Sizing and selection software for AKM, DDR and CDDR motors can be downloaded at www.glcontrols.com.

Visit www.danahermotion.com for other product information.