WHITE PAPER



INDUSTRIAL INDEXING SYSTEMS, INC.

Motion Control Technology

The heart of a multi-axis automation system is the ability to synchronize the motion of multiple motors to a designated "master" source device. IIS's Emerald products offer universal motion technology that combines realtime functions in a unique, software-based mechanical/electrical environment to address the complexities of modern automation control.



Multi-axis synchronization using servos provides a powerful tool for precision motion control applications.

Master/Slave Positioning Algorithms

Depending on the machine application, a source device may be an encoder device measuring web travel, position feedback from another motor that is driving a feed roll, or an Emerald Virtual (software) Motor. A Virtual Motor provides a software-configured internal master source with control over its virtual distance, speed and acceleration.

Synchronization between the source device and a servomotor is achieved using the Emerald electronic gear ratio or electronic cam motion functions. The process starts by locking the master source device to the slave servomotor. How the source device gets locked to the servomotor is critical especially when the source is running. The Emerald Automation Controller provides eight lock methods for smooth and accurate transition regardless of the speed of the source. The source device and the lock method are specified first. Then, the lock control is enabled to start the synchronization process.

Digital outputs are synchronized to a master source using the programmable limit switch (PLS) function. Up to eight independent PLS engines can be enabled with each engine controlling the action of sixteen outputs. Digital outputs can be located on the servo drive or on the SERCOS network using 3rd party I/O interface blocks.



Electronic gearing and cams offer key technology that can be coordinated in real-time with PLS digital outputs.

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 The IIS Team
 Headquarters in Victor NY

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Discover how our advanced motion control components and superior support can redefine your operations. Let's embark on a journey to operational excellence. Ready to elevate the efficiency, consistency, and repeatability in your operations? Call us today at (585)924-9181 to discuss your application. Our location houses all critical departments: Applications Engineering, R&D, Production, Warehouse, Panel Shop, Quality Control, Sales, Marketing, and Customer Support. Having everything under one roof speeds communications and provides better service to our customers.

Check out our IIS InMotion Blog for the Servo Motion Control Professional ~ https://www.iis-servo.com/blog/



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4 MOTION CONTROL TECHNOLOGY

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