

LISTEN.
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Advanced PLC Topics for Micro Controllers

Micro830 & Micro 850 Motion Capabilities

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Allen-Bradley • Rockwell Software

Rockwell
Automation

Agenda

PTO Type of motion control

Micro800 motion features

Typical Applications

- What will you know after completing the lab
 - Know about PTO type of motion
 - Know how to use Connected Component Workbench to program a PTO motion application
 - ✓ Know how to configure motion axis
 - ✓ Know how to use dedicated motion instructions

**Booth 127
Essential Components****Allen-Bradley Micro800™ Programmable Controllers****Hands-On Labs (90min)****L05: Basic PLC Programming with Micro800 controller (Basic Lab)**

Wed – 8:00am, 10:00am, 12:30pm

Thur – 10:00am, 12:30pm, 2:30pm Room: 100 Level, 118A

**L06: Advanced PLC Topics for Micro Controllers with Micro830 and Micro850
Motion Capabilities (Advanced Lab)**

Wed – 2:30pm

Thur – 8:00am Room: 100 Level, 118A

Technical Session (60min)**T06: Embedded Motion and Ethernet Capabilities on Micro800 PLCs**

Learn about the new embedded motion capabilities with up to 3 Axes of 100KHz Pulse Train Output for simple positioning applications with Micro830 and Micro850 controllers.

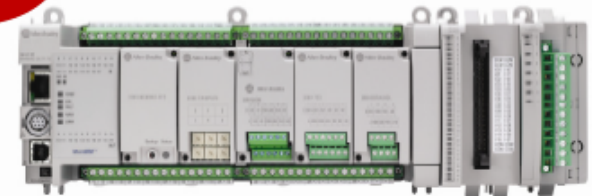
Wed & Thurs: 2:00pm Room: 200 Level, 201A

Workshop (90min)**W04: Connected Components Workbench™ and Accelerator Toolkit**

Wed & Thurs: 2:30pm Room: 100 Level, 103A

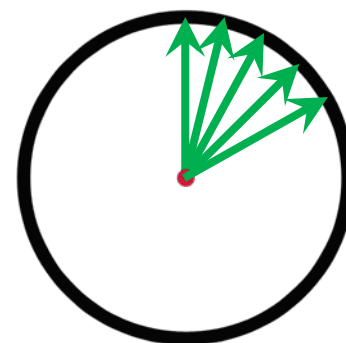
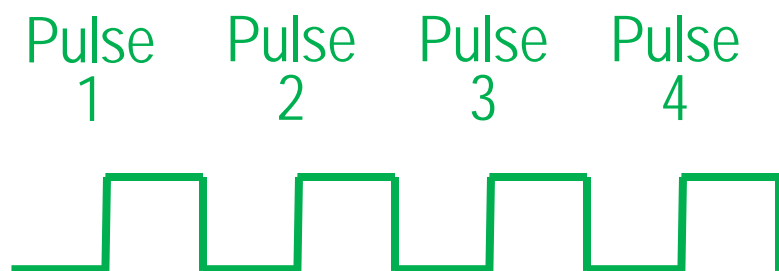
Backroom Meeting (120min)**Micro800 Device Level Networking Concept Preview and Micro PLC Voice of Customer**

Wed & Thurs: 10:00am—12:00pm Room: 100 Level, 106B

**NEW!**

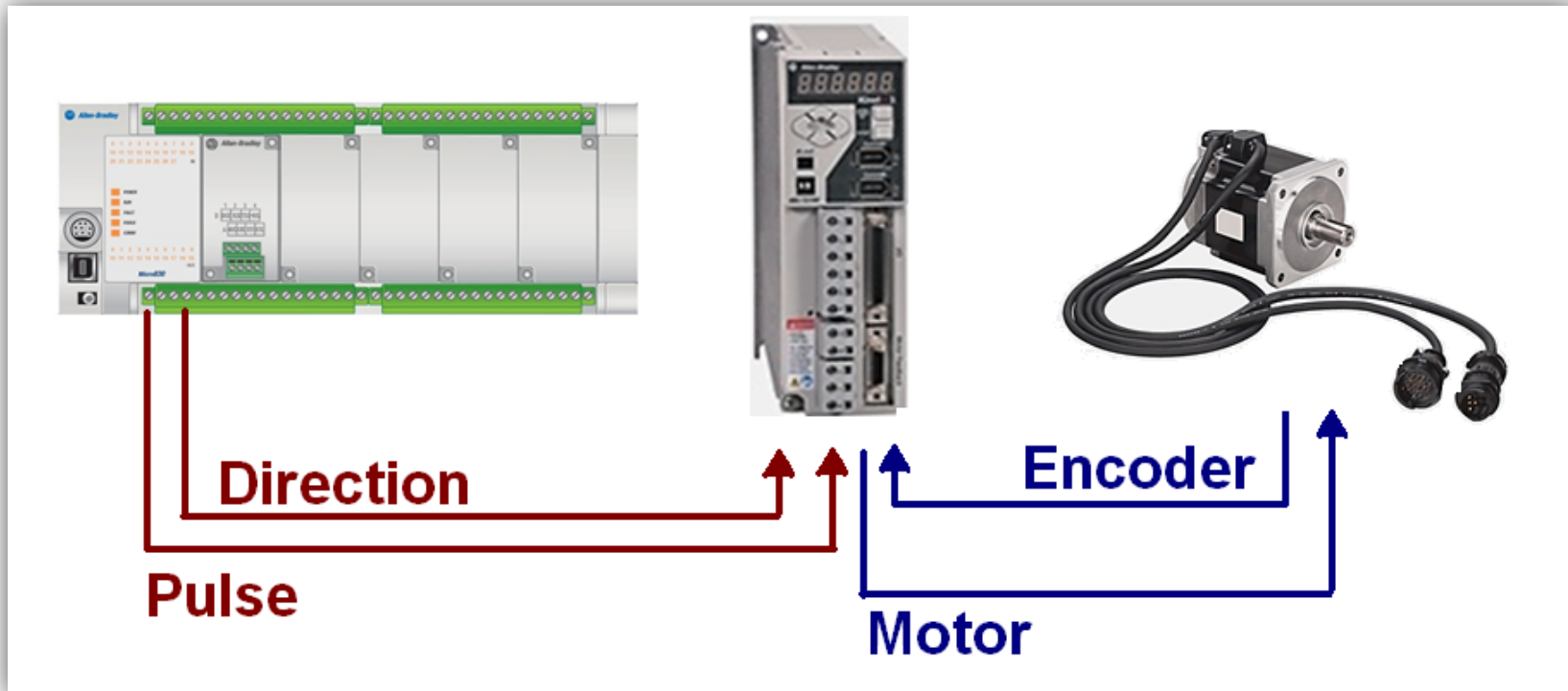
Basic Concept of Pulse Train Outputs

- Typically PTO Motion is for precise positioning applications that require more flexibility than provided by Index Positioning
 - Also used for precise velocity control especially if position registration is required. (Not used for torque control)
- A pulse rotates the motor by a fractional amount (e.g. 1/2000 revolution)



PTO is low cost and good performance. Can be interfaced using low cost shielded wiring to any component servo drive

PTO type of Motion control

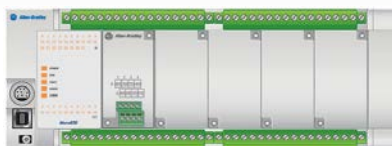


- Motion planner in controller sends commands to Kinetix 3 servo drive
- Kinetix 3 servo drives sends power to the motor and receives feedback from the encoder

Micro800 Motion Features

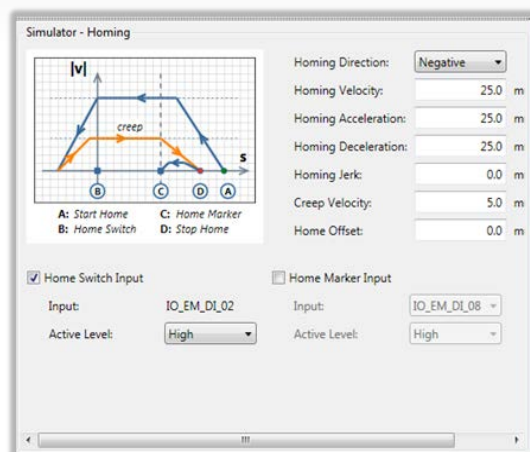
Support up to 3 axis with PTO

- Compatible with Kinetix 3/300, and 3rd party drives that support PTO
- Exact position registration of PTO axis with Touch Probe.
- Available on Micro830 and Micro850



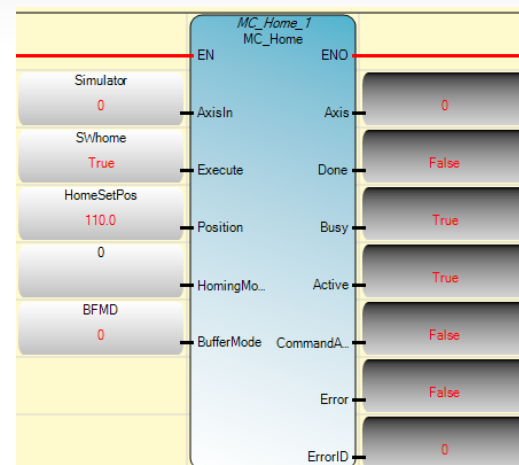
Easy to use GUI for configure the Motion

- Create and configure axes in CCW using 5 simple to use configuration screens
- Use the Axis Monitor to see important information about the status of axes



Dedicated motion instructions

- Easy to use motion instructions
- Reduce the complexity of Motion programming



Program Example: Homing



MC_Home_1 MC_Home			
EN	ENO		
Simulator 0	AxisIn	Axis	0
SWhome True	Execute	Done	False
HomeSetPos 110.0	Position	Busy	True
0	HomingMo...	Active	True
BFMD 0	BufferMode	CommandA...	False
		Error	False
		ErrorID	0

Edge of Home switch before homing starts

Move (in Negative direction);

Until the moving part decelerates to stop;

Move (in Positive direction) in creep velocity to detect home switch on->off edge;

When detected, record the position as mechanical home position, and decelerate

to stop at this position (the mechanical home position recorded during moving back

to the position configured in Axis configuration in CCW GUI).

Wide Variety of Motion Applications

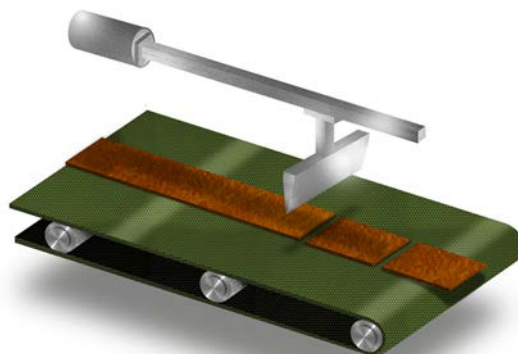
Packaging

- VFFS (Vertical Form Fill and Seal)
- Case Erector
- Stretch wrapping



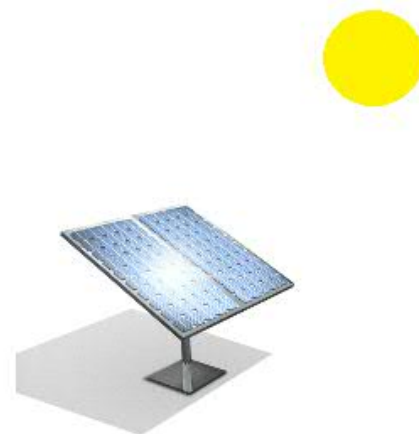
Material Handling

- Conveyors
- Sorters
- Pick and Place
- Cutting



Energy

- Solar PV Two-axis positioning
- Solar Thermal single-axis positioning



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Thank You !

Let's start the Lab



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