



Kinetix® Motion – Modernization & Migration

expanding **human possibility**®



PUBLIC



Agenda

1

Understand the
Path

2

Consider the
Architecture

3

Consult the
Resources



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Understand the Path

Step Forward to Modernization

Steps along the modernization path

WHY MODERNIZE?
Better performance, greater flexibility,
and more informed decisions

EVALUATE
Determine if you will reuse, replace, or redesign
the hardware

EXECUTE
Use Rockwell Automation® + partners
to help you execute your plan



REUSE
You must keep your existing machine and its
equipment

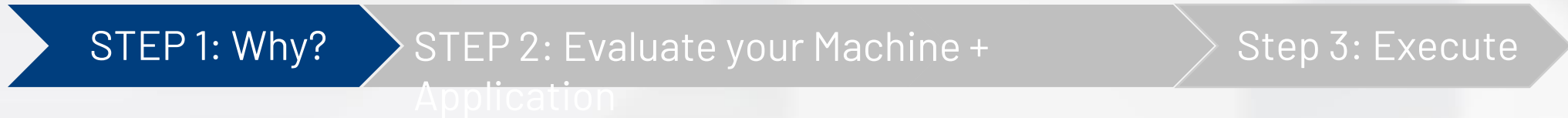
REPLACE
You must keep your existing machine but replace
some hardware

REDESIGN
You will redesign all or most of the machine and
application

Whitepaper – [Consider Motion Modernization](#)
Whitepaper – [Step Forward to Motion Modernization](#)

Modernization Path: Step 1 – Why?

What does modernization mean?



WHY MODERNIZE?

Better performance, greater flexibility,
and more informed decisions

Product Lifecycle
Announcement

Modernization may be necessitated by outdated components, but it can also bring improvements:

- **Higher productivity**
- **Improved human and machine safety**
- **Increased energy efficiency & sustainability**

Modernization Path: Step 2 – Evaluate your Machine + Application

Reuse



REUSE
You must keep your existing machine and its equipment

REUSE (Implementation: easiest):	Engineering Time	ROI	Cost	Expertise
	low	low/med	low	low/med

When leveraging existing machine hardware, modernization may be realized by upgrading software and firmware.

Modernization Path: Step 2 – Evaluate your Machine + Application

Replace



REPLACE
You must keep your existing machine but replace some hardware

REPLACE (Implementation: medium):	Engineering Time	ROI	Cost	Expertise
	med	med	low/med	med

Replacement may be a small retrofit:

- Keep controller and network but replace drives and IO systems

...or may be a small to medium retrofit:

- Keep controller but replace the drive and network technology

Modernization Path: Step 2 – Evaluate your Machine + Application

Redesign



REDESIGN
You will redesign all or most of the machine and application

REDESIGN (Implementation: harder):	Engineering Time	ROI	Cost	Expertise
	high	high	med/high	med

Revisiting the design of your machine can uncover opportunities for improvements in flexibility, sustainability, and maintainability.

Modernization Path: Step 3 – Execute

What does execution entail?

STEP 1: Why?

STEP 2: Evaluate your Machine +
Application

Step 3: Execute

EXECUTE

Use Rockwell Automation® + partners
to help you execute your plan

Rockwell Automation has an extensive ecosystem to support you. Be sure that your modernization plan is executed at YOUR pace.

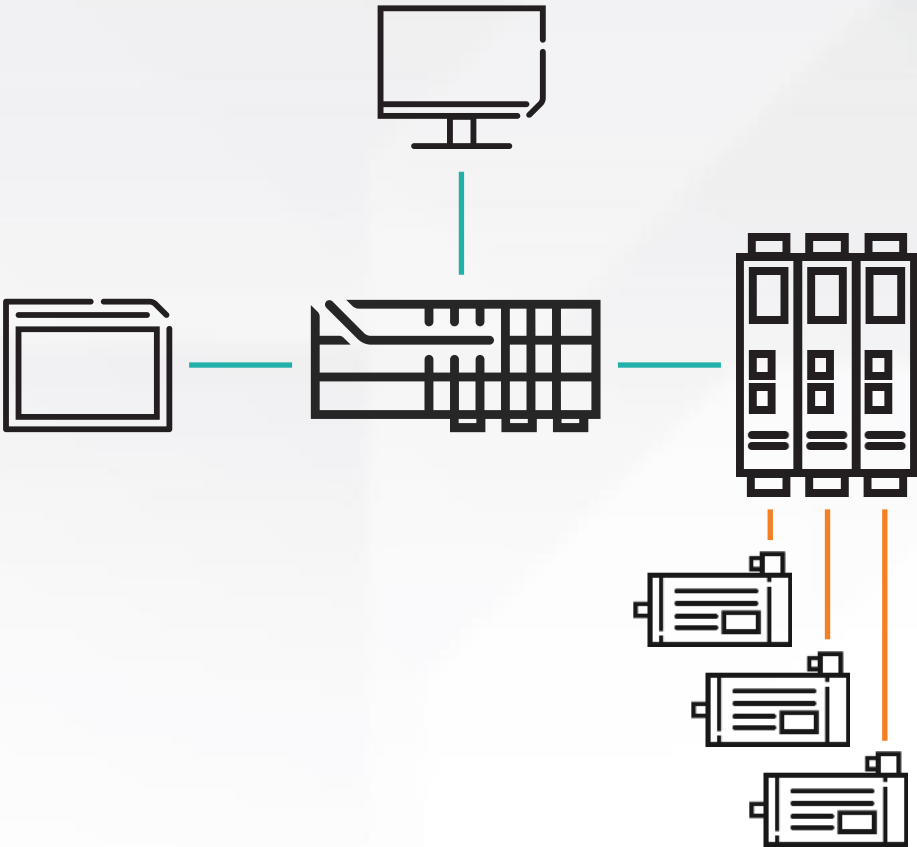


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Consider the Architecture

Understand the Components

What components create a motion system?



Motion Control axes consist of:

Controller	 
Communication	 
Drive Architecture	 
Actuator + Feedback	 

Controller - Logix Architectures

Controller



Consider modernization requirements

- Will one or more existing controllers be replaced?
- If considering a new controller, do the features & functions meet or exceed the existing?

Leverage available resources

- With Logix, use the [Controller's Selection Guide](#) for controller technical information

Communication – Discrete or Network

Communication

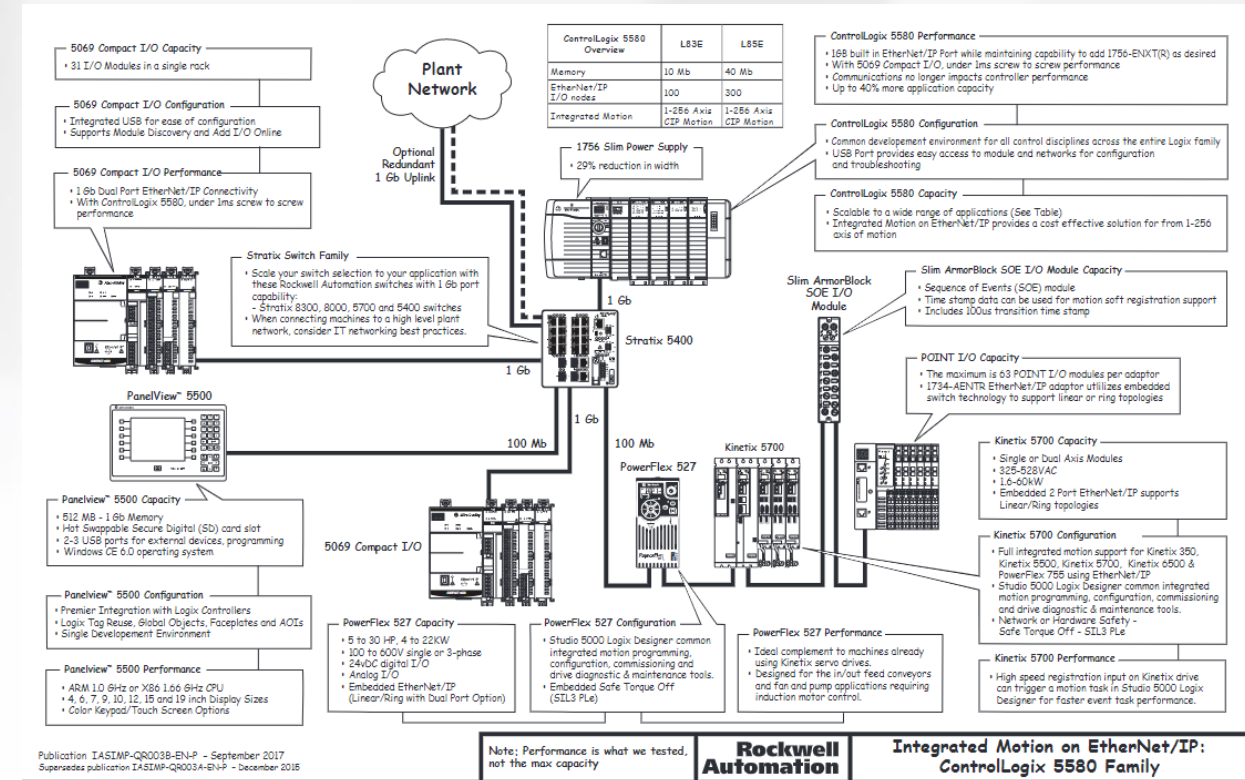


Consider modernization requirements

- Will the existing communication layer be modernized (ex. Sercos to EtherNet/IP)?

Leverage available resources

- Use **LAB** (Integrated Architecture® Builder) to design and evaluate the network architecture
- See the **popular architecture drawings** for system layout examples



Drive Families – Add & Mix

Consider drive technologies that were not available in the past

Drive
Architecture



Standalone Machines



Kinetix® 5100 Core Features

- EtherNet/IP standalone drive
- Standalone / simple machines
- Low axes count
- Indexing drive
- Hardwired safety
- KNX5100C configuration tool

Small to Medium Machines



Kinetix® 5300 Core Features

- Entry-level CIP motion drive
- Simple to medium machines
- Low axes count
- Hardwired safety
- Load observer

Medium machines



Kinetix 5500 Core Features

- Mid-range CIP motion drive
- Medium machines
- Low axes count
- DC bus-sharing
- Single-axis modules
- Hardwired and network safety
- Load Observer

Large Machines



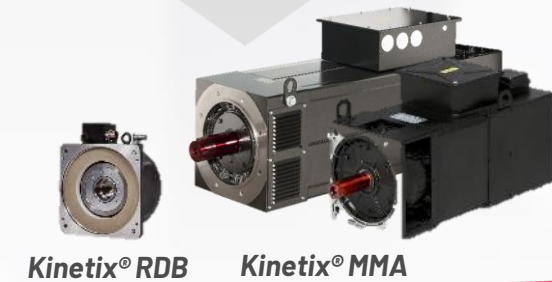
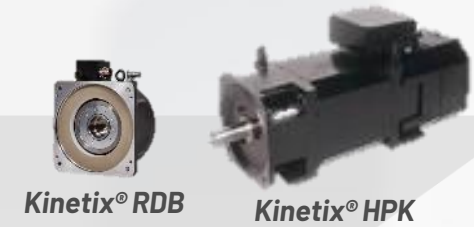
Kinetix® 5700 Core Features

- Multi-axis CIP motion drive
- Large machines
- High axes count
- Diode / active front end power source with DC bus-sharing
- Single- and dual-axis modules
- Hardwired and network safety
- Drive safety features
- Load Observer

Rotary – Add & Mix

Consider rotary motor combinations that were not available in the past

Actuator +
Feedback



Wide range of power

Linear – Add & Mix

Consider linear motor combinations that were not available in the past

Actuator +
Feedback



Linear Motors

- High levels of acceleration and servo responsiveness to increase throughput
- No mechanical wear items results in highly reliable motion



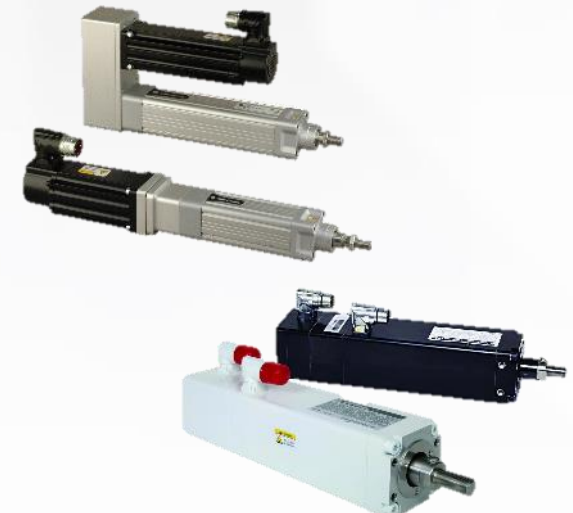
Linear Stages / Thrusters

- Varying degrees of payload for high thrust force applications
- Provide an out-of-the-box precise two-dimensional linear motion solution



Linear Actuators

- Flexible servo-controlled rod actuation
- Fully assembled, ready to install
- Clean, energy-efficient alternative to pneumatic and hydraulic actuators



Independent Cart Portfolio

Broadest Portfolio in the Industry

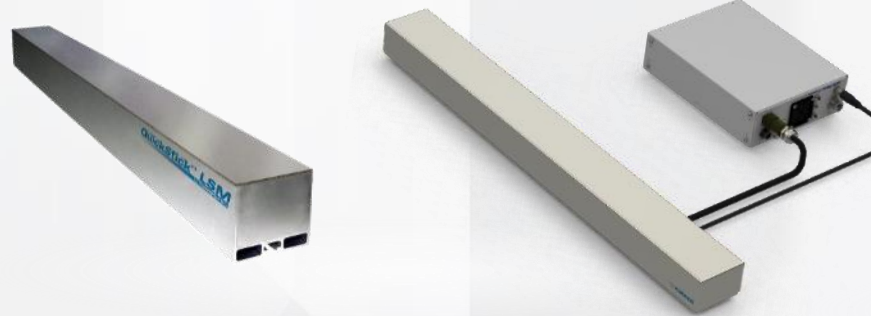
MagneMover® LITE

- Intelligent conveyor system for light payloads (<10 kg)
- Easy design and setup
- Flexible, modular, and scalable
- Simple programming and control of 1,000 s of carts



QuickStick® QuickStick HT™

- Intelligent propulsion and control system
- Payloads from 10 s to 1,000 s of kilograms
- Flexible, modular, and scalable
- Simple programming and control of 1,000's of carts



- Intelligent positioning and flexible conveyor system
- Deterministic closed loop servo performance
- Automatic synchronization with other motion axes
- High dynamic performance and force





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Consult the Resources

Technical Documentation Center

We want to simplify your experience. That's why we've gathered essential documentation for your Allen-Bradley and FactoryTalk products in one location. Quickly access and download technical specifications, installation instructions, and user manuals for your product.

Technical Documentation Center

Product Documentation

Product Certifications

Product Drawings & Wiring Diagrams

More

FAQs

Find your product. Find your documentation.

Browse technical documentation organized by product area. Each product page provides a collection of links to essential documentation to help you complete typical tasks. Browse the specification documents, installation instructions, user manuals, reference manuals, and related content on each page to find what you need.

Human Machine Interface

Graphic Terminals
Industrial Computers
Industrial Monitors
Tethered Operator Terminals
Thin Clients

Independent Cart Technology

iTRAK Intelligent Track Systems
MagneMover LITE Intelligent Conveyor Systems
QuickStick Intelligent Conveyor Systems

Input/Output (I/O) Modules

Chassis-Based
1756 ControlLogix I/O Modules
5069 Compact 5000 I/O Modules
2095 Micro800 Expansion I/O Modules
1768 Compact I/O Modules
1746 SL C 500 I/O Modules

Lighting Control

Combination Lighting Contactor
Feeder Disconnect Lighting Contactor
Multi-Pole Lighting Contactor

Motion Control

Actuators
Encoders, Absolute
Encoders, Incremental Optical
Kinetix 2090 Cables
Kinetix EtherNet/IP Indexing and Standalone Servo Drives
Kinetix Integrated Motion on EtherNet/IP Servo Drives

Technical Documentation Center

- Access technical content organized by product line
- Each page includes links to essential manuals to help you install, configure, and use your product
- No need for multiple searches; find what you need, all in one place

Kinetix 5300 Single-Axis EtherNet/IP Servo Drives

Need specifications?

- [Kinetix Motion Control Selection Guide](#)
- [Kinetix Servo Drives Specifications](#)
- [Kinetix 5300 Drive Systems Design Guide](#)
- [Kinetix Servo Drive Performance Specifications per Ecodesign Regulation \(EU\) 2019/1781](#)

Certifications

- [Browse Kinetix 5300 servo drive certification documents](#)

Ready to install?

- [Kinetix 5300 Single-axis EtherNet/IP Servo Drives Installation](#)
- [AC Line Filters Installation](#)
- [Bulletin 2097 Shunt Resistor Installation](#)
- [Kinetix 5700 Passive Shunt Modules Installation](#)

Use your product.

- [Kinetix 5300 Single-Axis EtherNet/IP Servo Drives User Manual](#)
- [Integrated Motion on the Ethernet/IP Network Configuration & Startup User Manual](#)
- [Motion System Tuning Application Technique](#)

Looking for more?

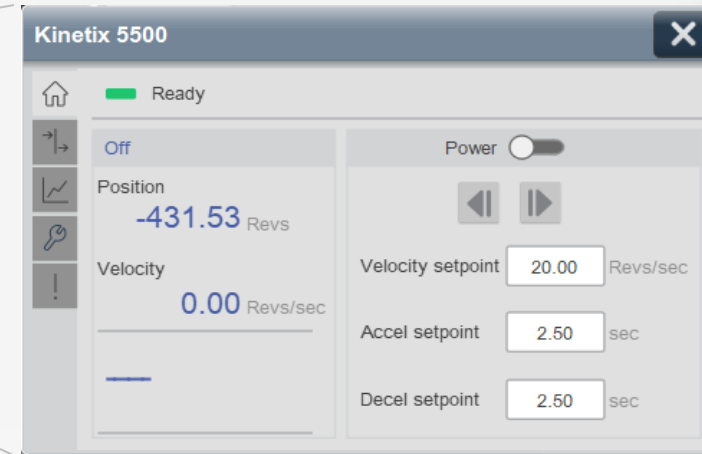
- [Integrated Motion on the EtherNet/IP Network Reference Manual](#)
- [Kinetix 350 to Kinetix 5300 Servo Drive Migration Guide](#)
- [Kinetix 5300 Feedback Connector Kit Installation](#)
- [Kinetix Rotary & Linear Motion Cable Specifications](#)
- [Shared-Bus Connector Kits Installation](#)
- [System Design for the Control of Electrical Noise](#)

[Visit the Technical Documentation Center](#)

rok.auto/techdocs

Or scan here.





Rockwell Automation Code Libraries

- Leverage libraries to accelerate design and implementation
- Tested, documented, and lifecycle managed library objects for devices and applications
- Consistent with common industry programming standards
- Available for free on the Product Compatibility and Download Center

Modernization – Resources

We are here to help, consult your Rockwell Automation® resources

You can start here:

[Consulting and Integration services](#)

Consulting and Integration

Help to Reduce Project Risks and Create Value





Thank you



expanding **human possibility**™



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