Kinetix 3 Component Servo Drive

Cost Effective, Easy to Use Servo Drive Solution

Allen-Bradley

Features and Benefits

The Allen-Bradley Kinetix® 3 line of servo drives is a cost-effective solution that delivers ultimate simplicity to your servo application. Some of the key attributes for the Kinetix 3 include:

The right functionality for the right cost

- Performs indexing on up to 64 points, through serial communications or over digital I/O
- Flexible command interfaces including digital I/O, analog, pulse train and Modbus-RTU

Simple commissioning

- Includes two adaptive notch filters that can adjust automatically while the drive is online to remove harmful resonance and vibration
- Automatic motor recognition and gain settings simplify start-up and help achieve the best results

Easy to use and maintain

- Modbus-RTU serial communications provides ability to make changes to any drive parameter through the controller or HMI during runtime
- The parameters are grouped and named with understandable default values to provide a true plug-and-play experience
- Easily configure the drive and copy configurations with UltraWare, a free software tool

The Kinetix 3 Component Servo Drive offers three frame sizes with various power specifications to help provide flexibility in solutions.

Rockwell Automation now offers a motion control solution for smaller applications. The Kinetix 3 line of servo drives can apply the appropriate level of control for the application without the added complexity. With its compact design, the drive is ideal for small machines requiring less than 1.5kW and up to 12.55 N-m of instantaneous torque.

The easy-to-use advanced features of the Kinetix 3 drive include online vibration suppression, advanced autotuning, faster settling time, and indexing functionality. The drive can index up to 64 points via Modbus or through its digital inputs.

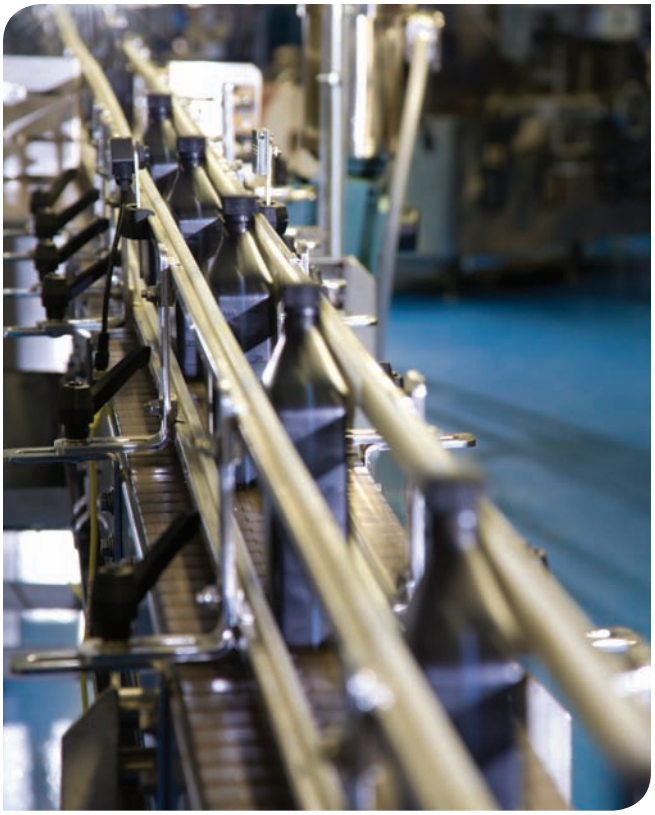
The Kinetix 3 drive is also easily configured using UltraWare, a free downloadable software available as part of the Kinetix Accelerator Toolkit, which is designed to speed up diagnostics. It enables you to configure multiple axes at once, organizes parameters and settings, and it includes a built-in oscilloscope for monitoring a wide variety of variables.

Simplify your configuration further by using the automatic motor recognition with TL-Series™ rotary motors, TL-Series™ Linear Actuators, and LDL-Series™ and LDC-Series™ linear motors.

Industries and Applications

The Kinetix 3 drives are ideally suited for low-axis count machines. The new drive offers models with output power as low as 50 Watts, allowing you to tailor the axes in your machine to the actual power requirement, which will minimize system size and cost. With small footprints and lower power ranges, these drives are perfect for a wide range of applications including:

- Intermittent form, fill and seal
- Indexing tables
- Laboratory automation equipment
- Medical technology and manufacturing
- Solar panel tracking
- Light manufacturing
- Electronics assembly
- Semiconductor processing



Connected Components Building Blocks

When the Kinetix 3 component servo drive is incorporated into a connected component solution, the Connected Component Building Blocks (CCBB) add even more ease of use. The CCBB provides CAD drawings, electrical layouts, Bill of Materials, sample code, and operator interface screens already developed. The building blocks also include diagnostics in addition to parameter backup and recovery features. The CCBB helps simplify the application of the servo solution.

The building blocks for the Kinetix 3 includes the ability to perform indexing operations for up to three axes over Modbus-RTU using the MicroLogix 1400 controller, PanelView Component operator interface, and TL-Series motors.

Compatible Motors and Actuators

Rotary Motors:
TL-Series

Linear Motors:
LDC -Series Iron Core
LCL-Series Ironless

Linear Actuators:
TL-Series Electric Cylinders

Cables and accessories are available to easily pair the motor to the Kinetix 3 drive.

Product Specifications

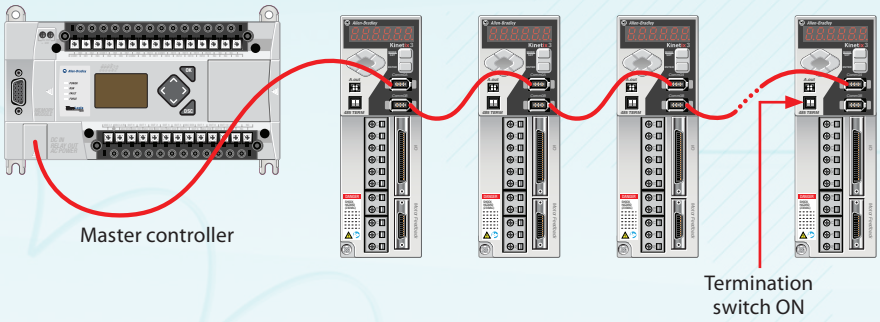
2071-	AP0	AP1	AP2	AP4	AP8	A10	A15
AC Input Voltage	170~264 VAC @ 47~63 Hz						
Input Phases	1ϕ	1ϕ	1ϕ	1ϕ	1ϕ/3ϕ	3ϕ	3ϕ
Continuous Power Output[1] (W)	50	100	200	400	800	1000	1500
Continuous Input Current (A_{rms})	1.30	2.38	3.68	7.14	10.82/6.25	8.75	12.37
Continuous Output Current (A_{rms})	0.6	1.1	1.7	3.3	5.0	7.0	9.9
Peak Output Current (A_{rms})	1.8	3.3	5.1	9.9	15.0	21.0	29.7
Embedded Shunt Power (W)	Not supported			30	70	70	70
Embedded I/O	10 Assignable Opto-isolated Digital Inputs, 6 Assignable Opto-isolated Digital Outputs, 2 Analog Outputs, Analog Velocity Command Input, Analog Current Command Input						
Control Modes	Analog Current, Analog Velocity, Position Follower, Pulse Train, Preset Velocity, Internal Position Control (Indexing)						
Size (W x H, mm)	50 x 155 (1.97 x 6.10 in)	50 x 155 (1.97 x 6.10 in)	50 x 155 (1.97 x 6.10 in)	58 x 155 (2.28 x 6.10 in)	81 x 155 (3.19 x 6.10 in)	81 x 155 (3.19 x 6.10 in)	81 x 155 (3.19 x 6.10 in)
Depth (mm)	141 (5.55 in)	141 (5.55 in)	141 (5.55 in)	141 (5.55 in)	186 (7.32 in)	186 (7.32 in)	186 (7.32 in)
Recommended Motor	TL-A120P	TL-A130P	TL-A220P	TL-A230P	TL-2540P	TLY-A310M[2]	TL-A410M
System Continuous Torque (N-m)	0.15	0.28	0.56	1.04	2.06	2.43	4.88
System Peak Torque (N-m)	0.35	0.72	1.36	2.79	6.02	9.01	12.55
Feedback Cable	2090-DANFCT-Sxx (xx = length in meters)						
Power Cable	2090-DANPT-16Sxx (xx = length in meters)						

1. The Continuous Power Output is based on the motor attached. In most cases, the drive can supply more power continuously than listed at the rated speed by reducing the torque slightly. Motion Analyzer can be used to verify application sizing.
2. TL-Series (Bulletin TLY) motor must be used in this case until the equivalent Bulletin TL motor is available for sale.

Communication and Control Modes

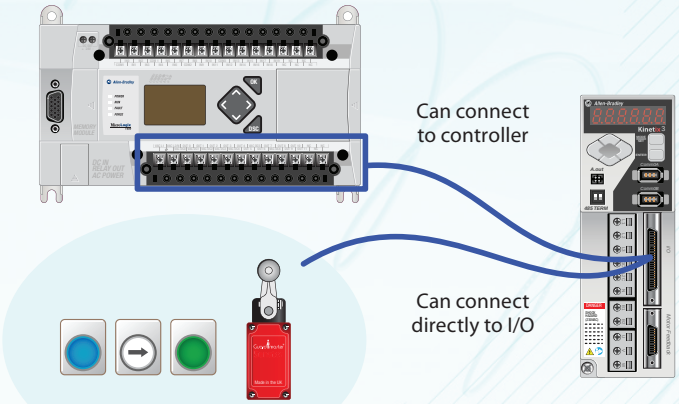
Modbus-RTU

- Advanced diagnostics and controls including indexing and present velocity command modes
- Two sockets used for easy wiring when daisy chaining
- Sample code is available for use



User I/O Control

- Simple and cost-effective
- Use of a controller isn't required
- Trigger can be directly from sensors for indexing or preset velocity
- Supports analog control and pulse train control



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