The Kinetix® 5700 servo drive helps expand the value of integrated motion on EtherNet/IP to large, custom machine builder applications.

With Logix as a single control engine, and one design environment – Studio 5000® – machine builders now have more flexibility to scale, design and control to help meet their needs. The Kinetix 5700 servo drive can help reduce commissioning time and improve machine performance. It offers the simplicity, power and space savings you need to help get your machine up and running faster.

The Kinetix 5700 servo drive is designed for machines with large axis counts and higher power requirements. It is available in single- and dual-axis servos with integrated and hardwired Safe Torque-Off and integrated advanced safety capability.

**Features and Benefits**

- Dual-axis modules
- Large power range 1.6 to 112 kW
- Servo and induction motor control
- Wide range of feedback types supported
- Dual Ethernet ports support linear and device level ring topologies
- Reduced wiring with single cable technology
- Tuning-less commissioning for most axes
- Best-in-class power density reduces cabinet space requirements up to 67%
- Innovative snapfit bus system
- CIP energy support to monitor energy data
- Accessory modules provide installation flexibility
- CIP security capable offers defense in depth to address different types of physical and electronic threats

**Allen-Bradley Kinetix 5700 Servo Drive**

Helping to Deliver an Innovative Motion Control System
Integrated Safety
The Kinetix 5700 servo drive with integrated safety on EtherNet/IP mitigates the need to separately wire the drive for safety. It reduces overall system wiring, saves time and money in installation and helps remove potential points of failure, thus resulting in less down time and troubleshooting. Integrated safety provides the capability to change the safety zoning and configurations, without needing to physically rewire the devices. Other features:
• Reduces complexity with a single network, EtherNet/IP for motion and safety functions
• Use EtherNet/IP to provide rich diagnostic data
• Simplifies zoning and reduces changeover time
• Integrated or hardwired safety – Safe Torque-Off – SIL3 PLe
• Advanced safety with five safe stop functions and three safe monitoring functions

Advanced tuning
Traditionally, tuning the axis on a machine was a special art. Whether it was commissioning a machine or providing maintenance due to changing mechanics over time – tuning has been a time consuming job. The use of Load Observer real-time tuning technology:
• Helps save time by mitigating the need for tuning each axis
• Automatically compensates for unknown mechanics, and compliance – such as in belts, flexible couplings, and shafts
• Automatically adjusts for applications where inertia varies during operation
• Enhances machine performance

The Kinetix 5700 can help reduce commissioning time and improve machine performance.
With the **Safe Torque Off** function, power that can cause rotation (or motion in the case of a linear motor), is removed from the motor. The drive will not provide energy to the motor that can generate torque (or force with a linear motor).

**Stop Functions – Safe Torque Off**

**Safe Stop 1** initiates and monitors the motor deceleration rate within set limits. This function stops the motor and initiates the Safe Torque Off function when the motor speed is below a specified limit.

**Stop Functions – Safe Stop 1**

**Safe Brake Control** provides a safe output signals to control an external brake. This function is coordinated with the Safe Torque Off function.

**Stop Functions – Safe Brake Control**

**Safe Stop 2** initiates and monitors the motor deceleration rate within set limits. This function stops the motor and initiates the Safe Operating stop function when the motor speed is below a specified limit.

**Stop Functions – Safe Stop 2**

**Safe Operating Stop**

The **Safe Operation Stop** function prevents the motor from deviating more than a defined amount from the stopped position. The drive provides energy to the motor to enable it to resist external forces.

**Stop Functions – Safe Operating Stop**
Monitoring Functions

**Safely Limited Speed**

The **Safely Limited Speed** function prevents the motor from exceeding the specified speed limit.

**Safe Direction**

The **Safe Direction** function prevents the motor shaft from moving in the unintended direction.

**Safely Limited Position**

The **Safely Limited Position** function prevents the motor shaft from exceeding one or more specified position limits.
Kinetix 5700 Target Industries and Applications

The Kinetix 5700 servo drive is a solution for OEMs requiring large, high performance machines with ControlLogix® or CompactLogix™ controllers. It is the ideal choice for machine builders that have high axis count and higher power requirements. The Kinetix 5700 with integrated safety, provides added benefits to customers looking for an EtherNet/IP solution for safety. The Kinetix 5700 combines high performance servo and vector motor control, which helps reduce machine complexity and reduces time and labor costs for integration. The Kinetix 5700 helps address complex application needs in a wide variety of industries.

**Target Industries**
- Beverage
- Consumer Products
- Food
- Automotive & Tire

**Target Segment – Converting**
- Print and Web Handling
  - Diaper Machines
  - Corrugated Paper Machines
  - Wipe and Napkin Machines
  - Flexo-folder-gluer and Diecutters
  - Narrow Web Press
  - Tissue Converting
  - Wire Rolling Machines
  - Bag Machines
  - Slitter Rewinders
  - Coating and Laminating Machines

**Target Segment – Manufacturing and Assembly**
- Tire Building Machines
- Press Feeds
- Conveyors
- Material Handling
- Foundry Pouring Systems

**Target Segment – Packaging**
- Cartoning
- Pouching
- Tray Loaders
- Case Packing
- Product Distribution Systems
- Baking and Confectionery Lines and Systems
Allen-Bradley Kinetix 5700 Regenerative Bus Supply

Providing Consistent Machine Performance Globally

The Kinetix 5700 regenerative bus supply leverages EtherNet/IP to enable monitoring of energy usage, and provides direct energy cost savings by regenerating excess energy back to the AC power source or for plant-wide use. The bus supply offers an integrated LC filter to help reduce installation costs. With a smaller overall footprint, users can expect up to a 70% reduction in required cabinet space. This supply is CIP security capable and offers defense in depth to address different types of physical and electronic threats. The bus supply can assure peak machine production output capability by stabilizing the DC bus voltage by riding through AC input voltage dips. This allows global machine manufactures to ship anywhere in the world and still meet machine output specifications.

Features and Benefits

- Bus supply will perform common DC bus voltage regulation regardless of input AC voltage
- Excess energy regeneration back to the AC power source or for plant-wide use allows for energy cost savings
- Integrated LC Filter reduces installation costs and reduces cabinet space

The Kinetix 5700 regenerative bus supply also expands capabilities to address the needs of large applications. Extend the DC-bus up to 70 m away from the power supply cluster to extended drive clusters of Kinetix 5700 inverters without DC-bus fusing. Extend up to 1200 m total motor cable length per bus sharing group.
The Bulletin 2198 Encoder Output Module synchronizes devices to your integrated motion on EtherNet/IP system. Reduced wiring increases reliability by mitigating the need to split encoder signals between the motor and drive. The module also increases machine design flexibility. It can sync to any axis of motion (integrated motion over EtherNet/IP or virtual) Kinetix® and PowerFlex® drives.

**Features and Benefits**

**Enhanced Performance and Troubleshooting**
- Synchronizes third-party devices to our integrated motion system
- Configure and program with Studio 5000 Logix Designer® Software
- In-cabinet installation mitigates the need to mount encoders on the machine
- Reduces wiring

**Increased Flexibility**
- Syncs with any axis of motion. It is not limited to nearby axis.
- Configurable output: quadrature or pulse train
- Dual Ethernet ports support a variety of network topologies
- Provides role-based access control to routines and Add-On Instructions
The innovative snap fit bus system requires no tools and can help you to more easily assemble and install. The Kinetix 5700 also incorporates Load Observer real-time tuning technology, yielding high performance control while mitigating the need to tune most axes, thus reducing your commissioning time. DSL Feedback ports support single cable technology and helps simplify wiring with Allen-Bradley® Kinetix VP motors.

### Kinetix 5700 Power Supply Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Voltage</th>
<th>Output Current</th>
<th>Peak Output Current</th>
<th>Module Width</th>
</tr>
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<tbody>
<tr>
<td>2198-P031</td>
<td>325-528V AC</td>
<td>10 A</td>
<td>31 A</td>
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<tr>
<td>2198-P070</td>
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<td>25 A</td>
<td>70 A</td>
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<td>47 A</td>
<td>141 A</td>
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<td>2198-P208</td>
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<td>69 A</td>
<td>207 A</td>
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<td>2198-RP088</td>
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<td>35 A</td>
<td>88 A</td>
<td>165 mm</td>
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<td>2198-RP200</td>
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<td>100 A</td>
<td>200 A</td>
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<td>2198-RP263</td>
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<td>176 A</td>
<td>263 A</td>
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<td>2198-RP312</td>
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<td>207 A</td>
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### Kinetix 5700 Servo Drive Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Output Current (RMS)</th>
<th>Peak Output Current</th>
<th>Power Rating</th>
<th>Module Width</th>
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<tbody>
<tr>
<td>2198-D006-ERSx</td>
<td>2x2.5 A</td>
<td>2x6 A</td>
<td>2x 1.6 kW</td>
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<td>2198-D012-ERSx</td>
<td>2x5 A</td>
<td>2x12 A</td>
<td>2x 3.2 kW</td>
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<td>2198-D020-ERSx</td>
<td>2x8 A</td>
<td>2x20 A</td>
<td>2x 5.4 kW</td>
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<tr>
<td>2198-D032-ERSx</td>
<td>2x13 A</td>
<td>2x32 A</td>
<td>2x 8 kW</td>
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<tr>
<td>2198-D057-ERSx</td>
<td>2x23 A</td>
<td>2x57 A</td>
<td>2x 15 kW</td>
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<tr>
<td>2198-S086-ERSx</td>
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<td>86 A</td>
<td>30 kW</td>
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<td>2198-S130-ERSx</td>
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</table>

Options include 2198-xxxx-ERS3 drives that offer hardwired and integrated STO modes. In addition, 2198-xxxx-ERS4 drives that offer the stopping functions and monitoring functions on pages 3 and 4.

### Kinetix 5700 Accessory Module Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Module Width</th>
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<tbody>
<tr>
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<tr>
<td>2198-DCBUSCOND-RP312</td>
<td>55 mm</td>
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<tr>
<td>2198-CAPMOD-DCBUS-IO</td>
<td>55 mm</td>
</tr>
</tbody>
</table>

For more information visit: http://ab.rockwellautomation.com/

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

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