Overview

Soft Servo Systems offers a variety of PC-based CNC and general motion control (GMC) products for OEM machine builders. Each product is available with a choice of several servo and I/O communications hardware platforms, including the MECHATROLINK™ II interface system.

This market-leading high-performance servo system is based on MECHATROLINK™ II (10 Mbps) digital servo communications technology from Yaskawa Electric Corporation. The MECHATROLINK II interface system works with the Yaskawa family of Sigma II, Sigma III and Sigma V servo drives, inverters and I/O, as well as any MECHATROLINK II-compatible devices produced by other companies. [NOTE: Not all Yaskawa servos and inverters are compatible with MECHATROLINK II – consult your Yaskawa provider for advice on compatibility.]

In the MECHATROLINK II platform, users connect exactly the number of servo drives they need, and can add MECHATROLINK II-compatible I/O modules on the MECHATROLINK II network, or take advantage of Soft Servo Systems’ optional and affordable fiber-optic VersioBus II I/O network for their I/O needs. Soft Servo Systems’ MECHATROLINK II platform provides an all-digital, minimal-hardware control architecture with many advantages such as easy and very flexible system configuration, simple setup and installation, overall cost savings and high-speed, high-performance control.

MECHATROLINK II Communications

MECHATROLINK II is a reliable, versatile and economically efficient network. This high-speed, real-time network provides simple, fast network control. Up to 30 stations can be integrated in one network, using a single, shielded twisted pair interface cable and a MECHATROLINK II PC card, with no

Yaskawa Electric Corporation

Yaskawa Electric Corporation, established in 1915, is a global manufacturer of motors and drives, and the world's largest manufacturer of AC servos, AC inverters and machine controllers. Known for its high quality and backed by a global network of 10,000 employees and partners, Yaskawa is a technological leader in today's world. Yaskawa products provide unmatched reliability and trend-setting performance. For more information, visit www.yaskawa.com.

MECHATROLINK II Features

- All-digital network eliminates digital to analog conversions, saving money and simplifying system setup and maintenance
- Daisy-chainable servo drives offer distributed control and multiple nodes with a total network length of up to 50 meters, allowing distance between PC, machine and peripherals
- Well suited to synchronous operation and interpolation motion controls. Control is optimized — high-speed communication provides real-time servo data (position, speed, input/output status) and control constants that are easily changed.
- Simple wiring (a single, shielded twisted pair interface cable) and only one interface card (PCI) – no additional proprietary hardware components are required
- Low cost, high noise immunity transmission
- Supports absolute and incremental encoders
- Many third-party MECHATROLINK II-compatible I/O modules are available

Hardware Connections in the MECHATROLINK II Interface System
### MECHATROLINK II Specifications

- **Data transfer rate:** 10 Mbps
- **4 ms to 30 ms cycle times for up to 30 stations, depending on the number of stations in the network.** Additional stations can be connected by adding additional interface cards: one card for 30 stations. [NOTE: 1 ms or 2 ms cycle times are possible, but not standard.]
- **Torque control:** generates constant torque independently of speed
- **Position control:** advances to the target position, and stops or holds
- **Speed control:** turns the motor at the specified speed with user-defined acceleration/deceleration slopes
- **Synchronous phase control:** controls multiple servo motors synchronously for electronic shaft and electronic cam

### Table: Parts and Specifications

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<th>Part No.</th>
<th>Description</th>
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<tr>
<td>NT110 or NT115</td>
<td>MECHATROLINK II adapter boards (PCI)</td>
<td>• For insertion in a host PC – NT110: PCI slot. Provides MECHATROLINK II connector for the MECHATROLINK II network (servo drives, inverters and I/O modules)</td>
<td>![NT110]</td>
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| FP-105 or FP-114 | VersioBus II adapter board (PCI) | • For insertion in a host PC (FP-105: PCI slot)  
• Provides a connector for an optional VersioBus II I/O network of IM-305s  
• Provides 32 points of on-board general I/O  
• Provides an encoder and digital I/O connector for a handwheel | ![FP-105] |
| TB37BD | 37-pin breakout box | • Provides screw terminal blocks for making connections between the VersioBus II adapter board and local I/O  
• 37-pin screw terminal module with a single terminal block for wire entry screw terminals | ![TB37BD] |
| HW-100 | handwheel | • A handheld manual pulse generator for manual jog operation of the machine or machine tool  
• Emergency Stop button  
• 5 axes available for single-axis control  
• 4 multipliers: X1, X10, X100 or X1000 | ![HW-100] |
| VersioBus II fiber-optic cable | • For connecting VersioBus II hardware components  
• 4.5 meters per IM-305 is included — more cable can be ordered | ![VersioBus II fiber-optic cable] |