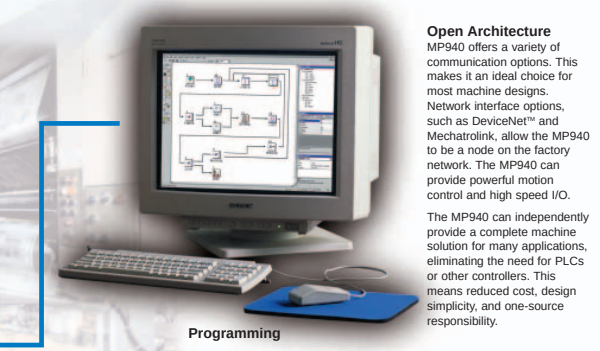
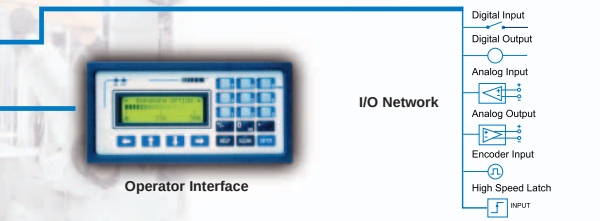




Open Architecture
MP940 offers a variety of communication options. This makes it an ideal choice for most machine designs. Network interface options, such as DeviceNet™ and Mechatrolink, allow the MP940 to be a node on the factory network. The MP940 can provide powerful motion control and high speed I/O.

The MP940 can independently provide a complete machine solution for many applications, eliminating the need for PLCs or other controllers. This means reduced cost, design simplicity, and one-source responsibility.



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MP940 Specifications - Include features of Sigma II drives with MP940

Microprocessor	486DX2, 64MHz, 32-bit, floating decimal
Programmable memory	800kB, approx. 2,000 program lines
Motor feedback - standard	13-bit incremental encoder (8,192PPR) - SGMAH & SGMPH
(varies with motor size)	17-bit incremental encoder (131,072PPR) - SGMGH & SGMSH
Motor feedback - optional	16-bit absolute encoder - SGMAH & SGMPH
(varies with motor size)	17-bit absolute encoder - SGMGH & SGMSH
Inputs	
Analog	1 @ +/- 12V, 16-bit resolution
Digital - programmable	11
Digital - dedicated	3
H.S. Digital (Registration)	2 @ 30µs response
Outputs	
Analog	1 @ +/- 10V, 16-bit resolution
Digital - programmable	8
Digital - dedicated	7
Network Communications	Mechatrolink and DeviceNet™
Position	
Position loop update period	500µs
Resolution	32-bit (+/-2,147,483,648 encoder counts)
Velocity	
Velocity loop response	400Hz
Resolution	0.01%
Control Input Power	24VDC
	MP940 controllers mount on any size Sigma II drive. Specifications shown are for packages of MP940 and Sigma II drives.
Global Certification:	**UL, cUL, CE, TÜV**
Sizes (Sigma II Drives)	
115VAC, single-phase	30W to 200W
230VAC, single-phase	30W to 1500W
230VAC, three-phase	500W to 15,000W
480VAC, three-phase	500W to 15,000W



Yaskawa's high speed motion network, uses Mechatrolink protocol for high performance applications.

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MotionSuite™ MP940 1.5 Axis Machine Controller

YASKAWA
A World of Automation Solutions™



MotionSuite™ MP940

1.5 Axis Machine Controller
for the Sigma II Servo System



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The MP940 is the Most Powerful I.5 Axis Controller in the World



- **Unmatched Quality**
- **Communication Networks**
- **Advanced Motion Functions**
- **Modular Design (plug-n-play)**
- **Ultra Fast and Powerful**

Eliminate web breakage

Solution: Yaskawa's MP940 offers programmable acceleration and deceleration profiles. Cycloidal motion profiles provide uniform loading over the entire accel or decel pattern, eliminating shock at transition points.

Identify and eliminate motion problems

Solution: Yaskawa's unique monitoring capability, combined with a "jerk reduction" feature, allows the customer to view the actual motion profiles. The "jerk reduction" routine enables the customer to selectively sculpt out shock components.

Increase throughput and reduce waste without sacrificing quality

Solution: The MP940 has an ultra-fast, 500µs position update, rapid settling time, and continuous path generation. This means increased accuracy at increased feed rates.

Reduce component size, weight, cost, and maintenance in CAM applications

Solution: The MP940 uses electronic camming, phase adjustment, and registration to precisely synchronize axes. This eliminates the need for cumbersome, expensive, mechanical cam-boxes.

Eliminate gear maintenance and backlash

Solution: Digital gearing allows independently driven axes to be perfectly synchronized, as if they were rigidly connected, allowing flexible positioning of drive components. Applications can have variable ratios.

Increased position resolution and noise immunity that allows greater distance between components

Solution: High density serial encoding allows 17-bit incremental or absolute position resolution (131,072PPR). Common mode noise reduction eliminates the detrimental effects of electrical noise up to 50 meters between components.

Enable fast changeover between products

Solution: MP940's massive program capacity and advanced motion functions allow fast changeover for different applications.

Automatically mesh fixed rate devices to a variable speed axis

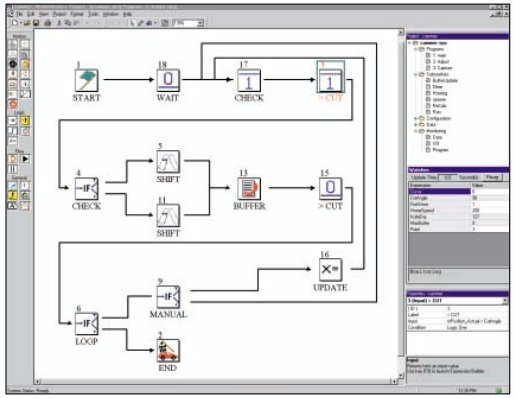
Solution: MP940's Programmable Limit Switch (PLS) allows the speed of a master axis to vary without changing the relative position reference to a device with a fixed cycle time, such as a solenoid.

MotionWorks+™ Programming Software

To program the MotionSuite™ MP940 controller, Yaskawa offers the MotionWorks+™ programming tool. This provides the user with easy access to the power of the MP940 and Sigma II Servo System through an icon-based, graphical programming environment. Precise motion and total machine control are only a few mouse clicks away.

Simply create application programs by arranging motion and logic icons in a visual flow chart. Setup wizards and simple menus guide you through controller setup, servo setup and tuning, variable management, and communications options. Powerful, user-friendly monitoring tools for fast, easy start-up and troubleshooting are included.

For users of Yaskawa's other MotionSuite™ products, the MP940 can also be programmed with the MotionWorks™ ladder based software tool. This universal tool programs Yaskawa's complete line of MotionSuite™ controllers.



Example Application