

High-Speed Feeder (Single Axis)

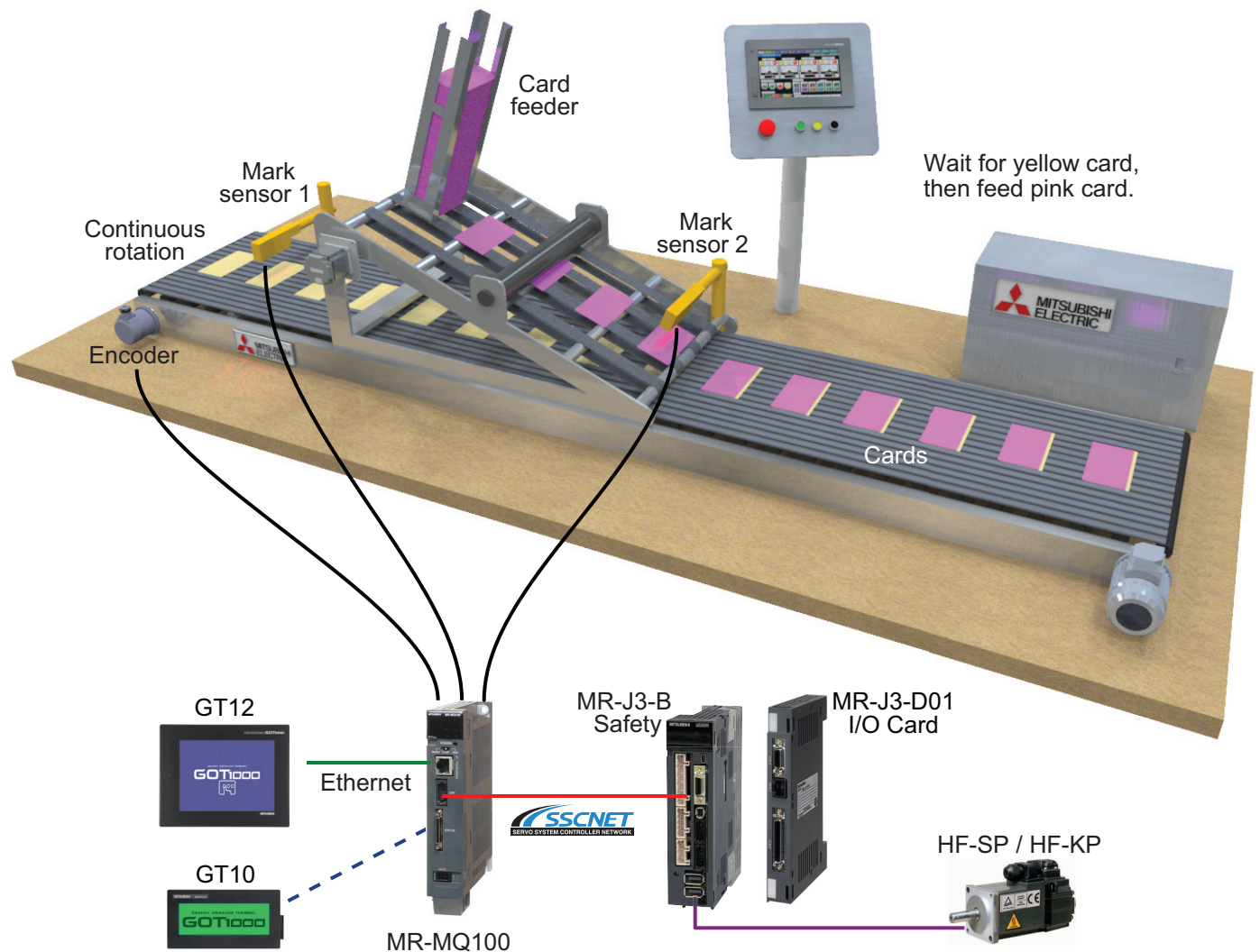
Mitsubishi Solution

Single Axis Motion Controller: **MR-MQ100**

Servomotor: **HF-SP, HF-KP**

Servo Amplifier: **MR-J3-B**

Graphic Operation Terminal: **GOT1000**



Example Applications

High-speed feeder applications can be adapted to perform a variety of functions. Some of the example machine applications include:

- ◆ Card feeding
- ◆ Product / Label placement
- ◆ Mail sorting
- ◆ Collating

Overview

In high-speed feeder applications, separate pieces of material are fed by a servo motor to be placed in specific locations on a moving belt. The servo speed depends on the speed of the conveyor (external encoder) and is commanded to move intermittently depending on the timing of a sensor that detects an object or location for the feed material to be placed onto. A second sensor detects the following card and establishes a precise stopping position. A synchronous encoder following function is used in combination with high speed registration.

Features

High speed registration function:

- Captures the mark sensor position within 30μs or less
- Determines ON/OFF clutch positions



- Higher accuracy product placement: Less rework
- Increased machine productivity

Mechanical support language with virtual axes: Easy to design complex motion profiles using motion development software, MT Developer.



- 50% reduced programming time
- Reduced labor cost
- Reduced machine cost (less mechanical and electrical components)



High resolution absolute encoders: Smooth and accurate positioning with 18-bit resolution (262,144 ppr) absolute encoders.



- Reduced overall cost
 - Reduced inventory cost (absolute encoder is standard)
 - Reduced machine & maintenance costs (eliminate switches)
- Reduced setup time
 - Re-homing not necessary after power down
 - Direct setting for start/stop positions

SSCNET III fiber optic servo network:

- Easy to set up and configure: Automatic parameter transfer
- Noise immunity



- 20% reduced wiring cost
- Reduced setup time (plug & play)



Real-time model adaptive auto tuning: MR-J3 amplifiers tune automatically and continuously, eliminating the need to re-tune or adjust manually.



- 30% reduced machine setup time
- Increased machine lifetime
- Improved productivity

Direct connection to HMI:

- Customizable screen development
- Built-in monitoring and diagnostics



- Easy to use
 - Less effort for programming and operating
 - Easy recipe management
- Reduced maintenance time & cost

Note: The values listed above are based on a real world application.

Customer Testimonials

- *"Mitsubishi Electric's system increases feed rates and improves product placement compared to our previous solution."*
- *"The use of Mitsubishi's visual programming environment was extremely helpful during development."*