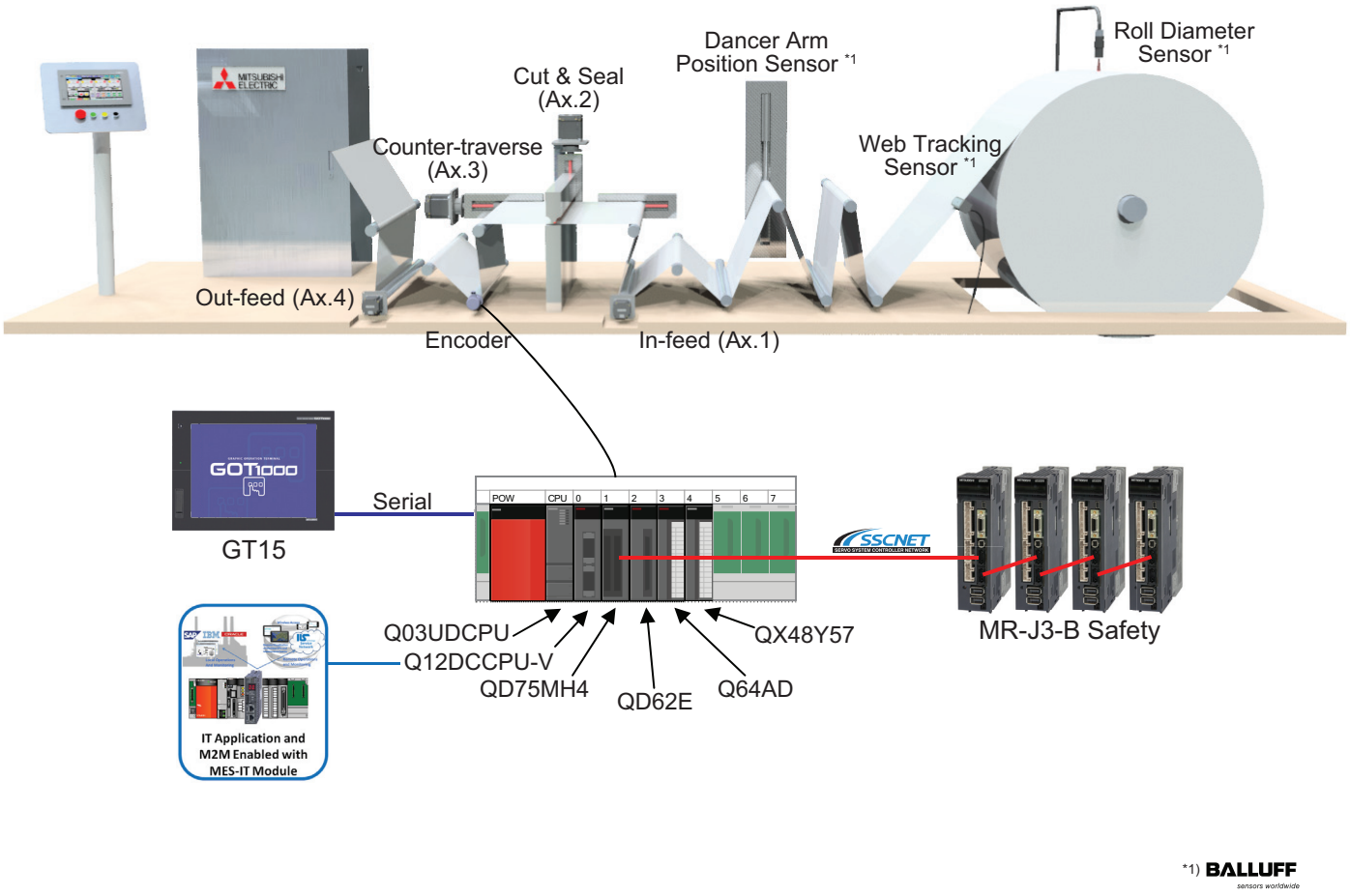
Mitsubishi Solutions

Bag Manufacturing

Mitsubishi Solution
Positioning Module: **QD75MH** Servo Amplifier: **MR-J3-B** Servomotor: **HF-JP**
PLC: **Q03UDCPU** Graphic Operation Terminal: **GT1555** High-speed Counter Module: **QD62E**
MES Interface IT module: **Q12DCCPU-V**



Example Applications

Bag manufacturing machines can be used to create the following types of bags.

- Produce grocery bags
- Garbage bags
- Food bags
- Candy bags

Overview

Bag manufacturing machines create rolls of trash bags or produce bags while also creating perforated marks on plastic material to assist in removing individual bags from the roll. A plastic film material is continuously fed into the machine where multiple servo axes are used to help perforate, seal and pull the material toward an exit station. A high-speed counter module is used to control the timing of the horizontal traversing and vertical cutter axes in order to accurately provide the seal and cut marks at the right locations on the material. A dancer arm is connected to an analog input toward the in-feed section of the machine to adjust the speed of the roll stock. Mitsubishi Electric's advanced solution facilitates high-speed bag production of up to 300 bags/min.

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Features	Advantages and Benefits
SSCNET III Servo System Network • Easy to set up and configure: Automatic parameter transfer • 100% noise immunity	• 20% reduced wiring setup time (plug & play wiring) • Less machine downtime ◦ No hassle from noise interruption ◦ Out-of-box product with 0.44ms refresh time for servo network 
Advanced closed loop position control between controller and amplifier: Automatically read/write servo parameters from the controller	• Improved machine maintenance through parameter monitoring ◦ Less downtime • Higher productivity
Low inertia, high-speed motor selection	• Up to 300 bags/min ◦ High performance, high throughput • Increased productivity
Real-time model adaptive auto tuning: MR-J3 amplifiers tune automatically and continuously, eliminating the need to re-tune or adjust manually.	• Improved Overall Equipment Effectiveness (OEE) ◦ Smooth movement with shock absorption • 30% reduced machine setup time 
Direct connection to HMI • Built-in monitoring and diagnostics • Ladder monitor/editor • Program upload/download capability	• Easy to use ◦ Less effort for programming and operating the touch panel ◦ USB program loading • Reduced maintenance time & cost ◦ Ladder monitor/editor 
Flexible point table programming • 35 selectable options with up to 600 points per axis • Continuous path operation	• 5-10% reduced development time ◦ Easy to select and create instructions • Easy changeovers ◦ Quick to add/modify motor profiles
Options for expansion: Connectivity to Balluff sensors	• Increased machine throughput and efficiency BALLUFF sensors worldwide
MES Interface IT • Direct data connection to IT systems • Convert raw data to actionable events • Data aggregation from other plant floor devices	• Simplify system architecture ◦ Eliminate need for intermediate PC infrastructure to link shop floors to IT ◦ Reduced integration time and effort ◦ Improve security and standardization 
Remote Monitoring: • Extend connections to remotely located IT systems and databases • Secure and encrypted transport • Meets plant security policies and practices	• Reduced operating and support costs ◦ Reduced travel and support expenses ◦ Reduced MTTR (Mean Time to Repair) ◦ Improved process efficiency ◦ Enables remote preventative and predictive maintenance

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

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