

Filling with PackML Implementation

Mitsubishi Solution

iQ Platform Sequence Controller: **Q03UDECPU**

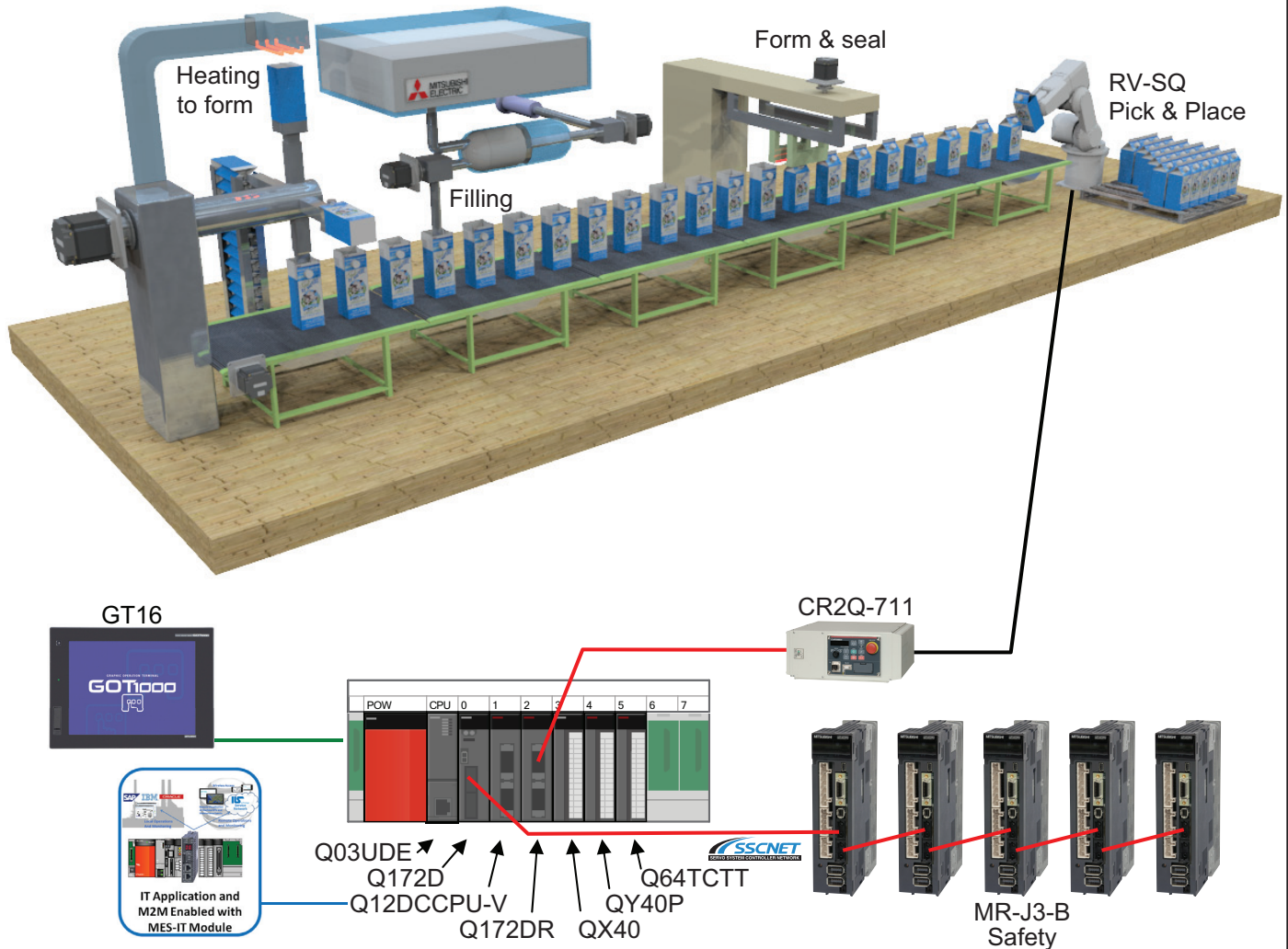
Servo Amplifier: **MR-J3-B**

Servomotor: **HF-SP, HF-JP**

MES Interface IT module: **Q12DCCPU-V**

iQ Platform Motion Controller: **Q172DCPU**

Graphic Operation Terminal: **GOT1000**



Example Applications

- ◆ Juice box filling
- ◆ Food / medicine powder filling
- ◆ Liquid packaging
- ◆ Carton filling
- ◆ Paint filling
- ◆ Soap and detergent filling

Overview

Filling applications in the packaging industry load containers onto a conveyor to be filled with a viscous liquid and then sealed shut for distribution. A loading arm rotates each container to be formed with heat before placement onto a conveyor. The conveyor then carries each product toward a filler station while coordinating movement with two servos to perform the filling process. As an option, a robot is used to pick and place the containers onto a pallet.

Mitsubishi Electric provides a complete solution through combining PLC, HMI, motion, and robot programming products under one platform.

Features

CAM Function with Mechanical support language:

Easy to create CAM profiles with visual line shaft programming



Advantages and Benefits

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



Full PackML Implementation:

- Conforms to ISA PackML standard and OMAC PackML implementation guide
- ISA 88 Make2Pack program structure



- Easy integration and modification by OEMs to meet specific machine requirements
 - Utilize standardized function blocks, alarm and event handling methods, HMI screens, and full set of PackTags

Complete solution with one platform:

- Integrated multiple CPU technology: High-speed backplane for combination of PLC, Motion, CNC and Robot CPUs
- Single vendor: Useful diagnostic functions and troubleshooting tools
- Easy system expandability



- Increased machine OEE
 - Up to 12,000 containers per hour
 - Quicker product changeover
 - Less scrap material
- Reduced TCO
 - Improved support
 - Less application downtime
 - Reduced inventory



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
 - USB program loading
- Reduced maintenance time & cost
 - Ladder monitor/editor

SSCNET III communication:

- Easy to set up and configure: Plug & play wiring
- High-speed 50Mbps motion network
- 100% noise immunity
- Automatic parameterization



- Reduced setup time: Less engineering costs
- Reduced wiring cost
- Reduced machine downtime
- Increased positioning accuracy: Less scrap material



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.

Customer Testimonials

- *"When a new motion CPU was added to our machine, Mitsubishi had a solution to incorporate the change into the existing system, which saved us time and money."*