Concept demonstration machines and roll-to-roll demo component products

Touch panel
Schneider Electric Japan Holdings Ltd.

GP4000 Series / SP5000 Series

This touch panel visualizes the devices linked to M-III.
In addition, use the remote HMI function to reduce man-hours for adjustments.

M2M Cloud Service / Global Communication Adapter
YE DIGITAL Corporation

MMCloud

Centralize the management of devices located inside and outside your home country, using visualization of operation status and positional information.

MMLink-3G

Perform remote maintenance on equipment located anywhere in the world, using 3G networks.

Machine Controller
Yaskawa Electric Corporation

MP3300

High-speed, high-precision synchronized motion system that delivers the highest performance in the industry.

AC Servo Drive
Yaskawa Electric Corporation

Sigma-7 Series

Setting a new industry standard in servo capability, with the concept of '7 ultimate e-motion solutions.'

Stepping Motor Drive
Oriental Motor Co., Ltd.

AlphaStep AZ Series Multi-axis driver

AlphaStep is compatible with MECHATROLINK-III, and realizes a multi-axis driver with compact design.

Remote I/O (tenslon, selsyn, rotary encoder)
M-System Co., Ltd.

R7 Series

Analog signals from tenslon sensors, selsyns and other devices can be directly converted to MECHATROLINK-III.
Message communication function allows each sensor to be adjusted from a touch panel.

High-precision Position Sensor Controller
Azbil Corporation

K1G-C04M

K1G-C04M enables control with even higher speed and precision by handling control information for the entire instrumentation/control/operation loop on the same network.

Displaying the products of companies that cooperated for this demo unit.

MECHATROLINK

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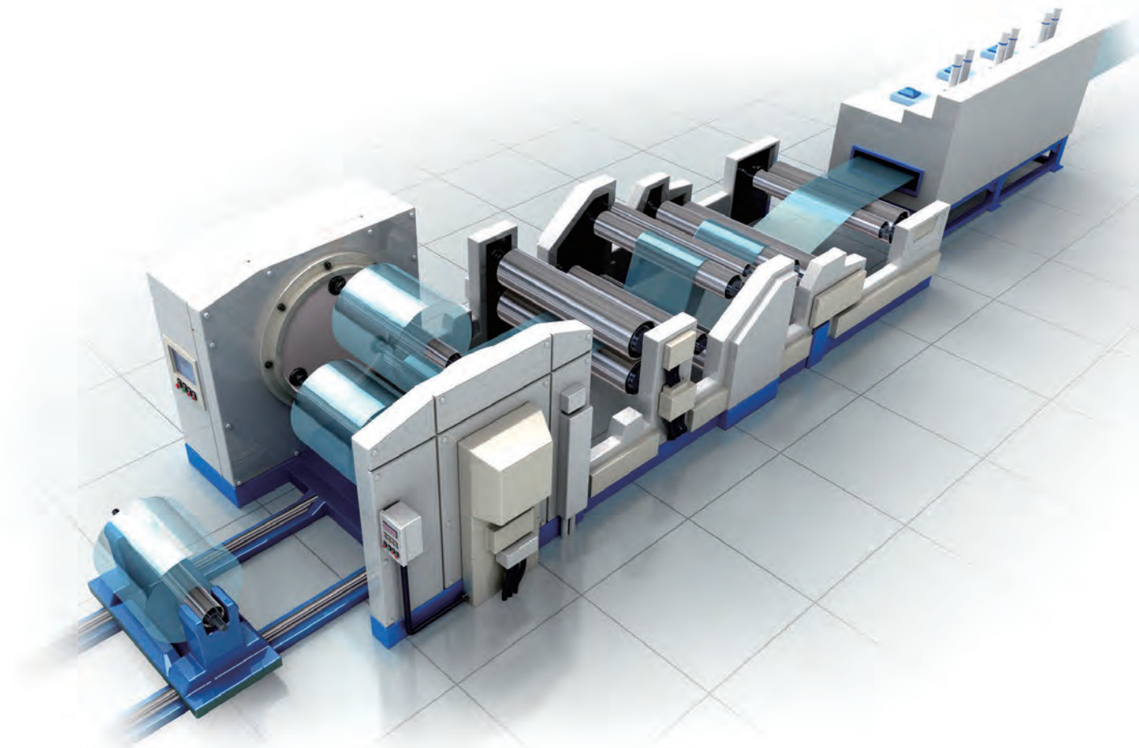
Vol.1 | Roll-to-Roll Application



What is a roll-to-roll system?

This system applies various treatments to film as it moves from the unwinding roll toward the winding roll. This application is common in food packaging and general converting machinery.

What the system delivers

- Control for constant speed of film feed ⇒ Roll synchronization using various types of detectors
- Control for constant tension of film feed ⇒ Roll synchronization system using pressure detectors

Issues facing clients

- Accuracy of the work feed directly affects the quality of the finished product. Information from the various types of sensors must be applied to the work feed.
- Analog devices require frequent setting for each workpiece, causing downtime.
- There are many analog devices, and many man-hours must be expended to connect each analog component to the master device.

MECHATROLINK

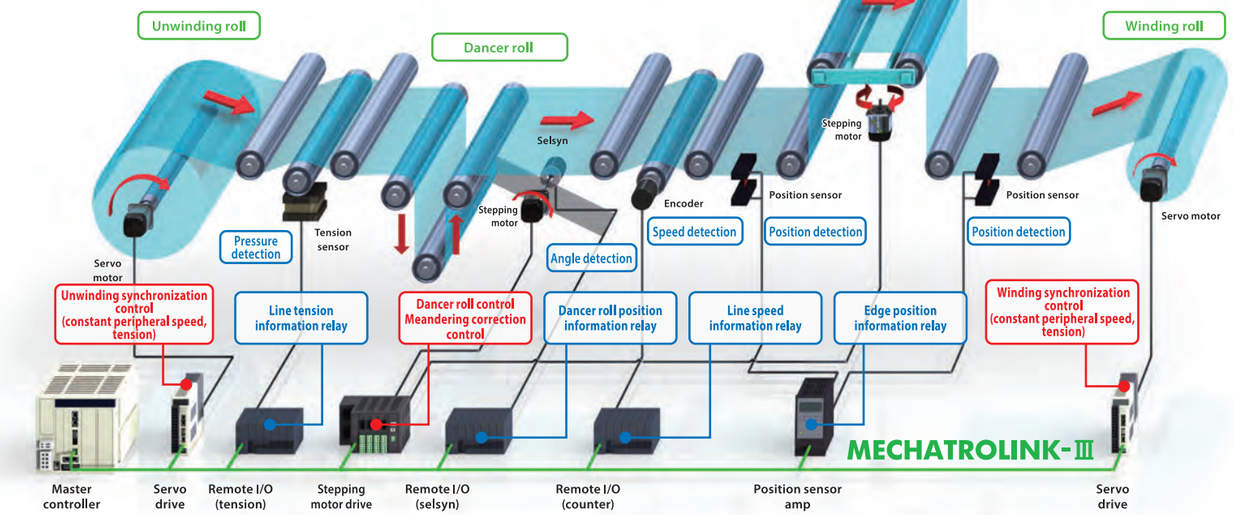
The benefits of choosing MECHATROLINK

SOLUTION 01

Reduces wiring for analog devices, enables information acquisition.

MECHATROLINK-III relays analog information such as pressure, speed, position, and angle to the controller. Optimal motor control is enabled in concert with the film feed.

Mechanism illustration



SOLUTION 02

Enables high-speed, high-precision winding and unwinding.

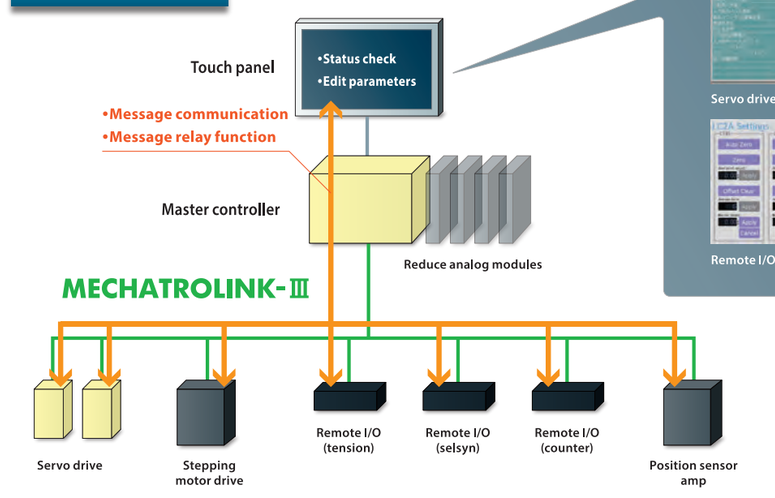
The 100 Mbps MECHATROLINK-III high-speed connectivity delivers synchronized control over multiple rollers. Combine with dancer roll and meandering correction to achieve high-speed, high-precision winding and unwinding.

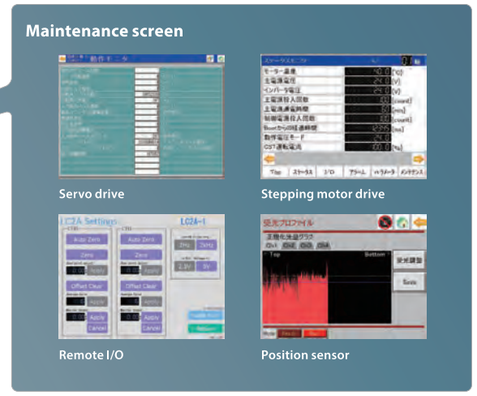
SOLUTION 03

Message communication makes adjustments a snap.

Using message communication and relay functions of MECHATROLINK-III allows information to be acquired from the devices of all companies connected to the network.
Setup tools from each company can be compiled onto the touch panel, making startup and maintenance more efficient.

Control box illustration





SOLUTION 04

Lower costs.

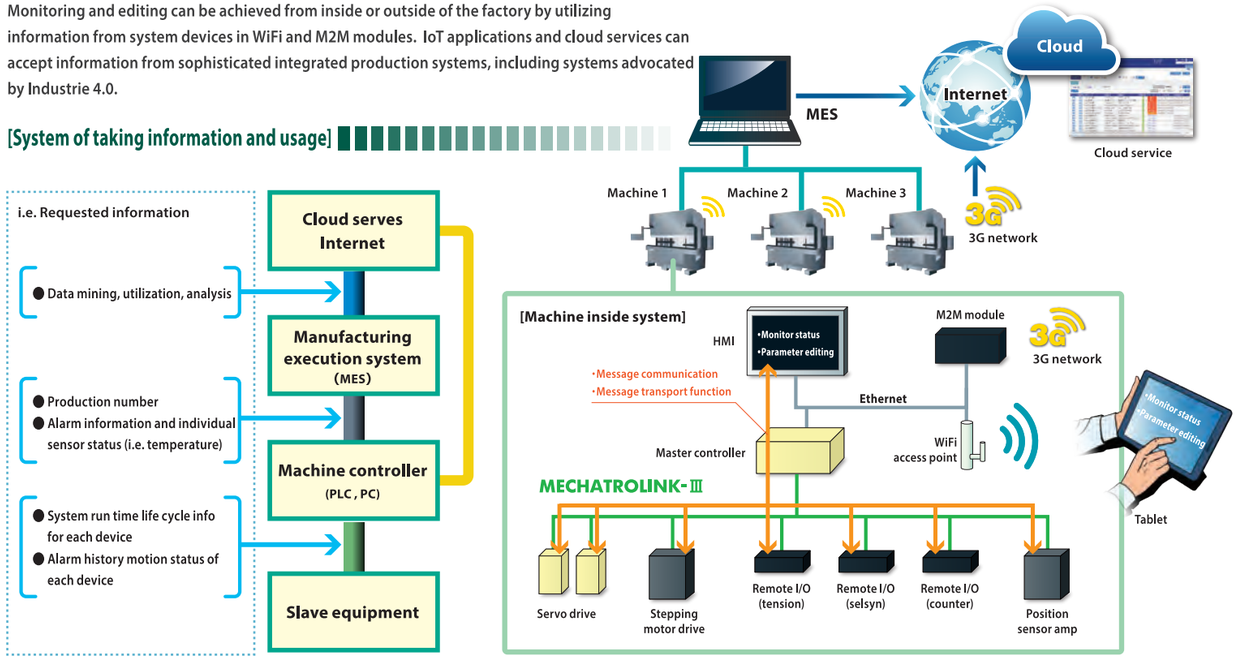
MECHATROLINK-III can reduce wiring man-hours for each type of analog device, and can also make it possible to eliminate the analog modules of the controller.

SOLUTION 05

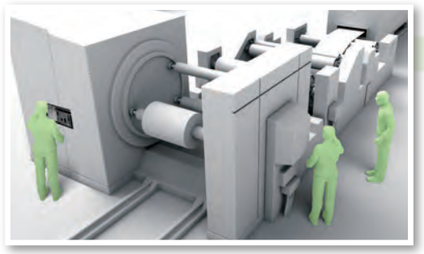
Combining message communication with M2M/IoT allows for sophisticated production systems.

Monitoring and editing can be achieved from inside or outside of the factory by utilizing information from system devices in WiFi and M2M modules. IoT applications and cloud services can accept information from sophisticated integrated production systems, including systems advocated by Industrie 4.0.

[System of taking information and usage]



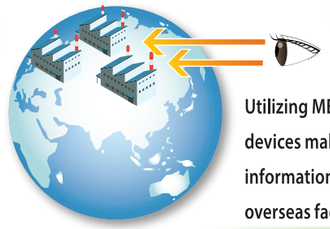
What you can do with MECHATROLINK-III message communication



Easy setup changes and startups for multiple products and low-volume production runs.

Centralize setup, maintenance, and other operations for devices that need frequent adjustments.

Status of slaves logged quickly.



Utilizing MECHATROLINK-III along with M2M/IoT devices makes it possible to remotely monitor information from equipment and devices in overseas factories.
Allows for predictive and remote maintenance.

Using message communication-enabled devices as a gateway to the IoT for production equipment requiring motion control, the manufacturing of the future becomes a reality.