MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

MELSEC MX-R CONTROLLER

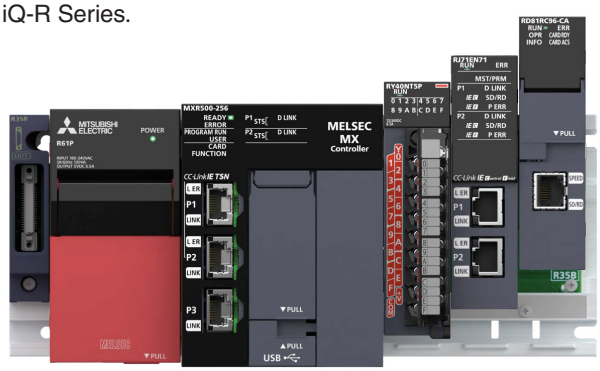
PRODUCT OVERVIEW

- **Integrated motion control**
- **High-speed performance**
- **Advanced connectivity**
- **Embedded cybersecurity**

The MELSEC MX Controller is an all-in-one solution engineered for high-speed, high-precision applications. “MX” stands for Manufacturing Transformation, a concept focused on advanced automation in manufacturing.

It combines sequence and motion control, integrating an OPC UA server and CC-Link® IE TSN network to improve data visibility and enable deterministic motion and I/O networking. With built-in cybersecurity and advanced diagnostics, the MX Controller is a key enabler of digital transformation (DX) in manufacturing.

MX-R Controller is compatible with iQ-R backplane, power supplies, I/O modules, and networks (including Ethernet/IP Plus module). It uses the same programming software, GX Works3, which makes it easy to upgrade from Q and iQ-R Series.



KEY BENEFITS:

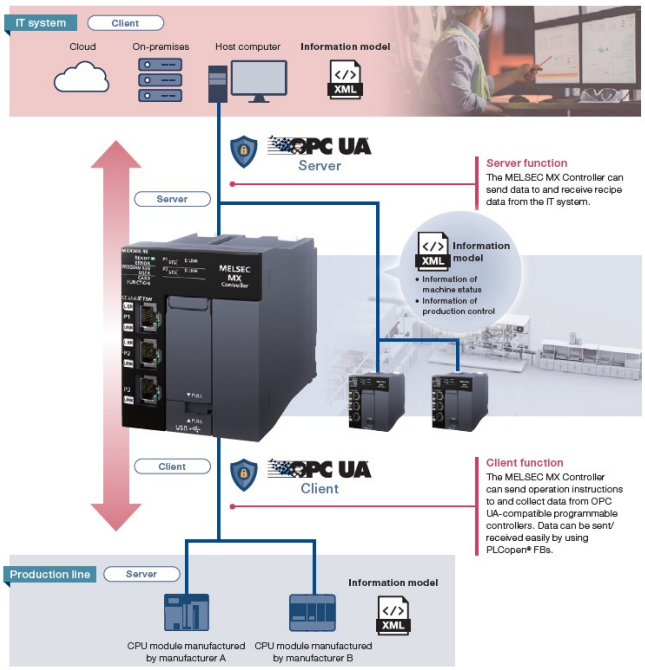
- All-in-one controller with the latest multi core MPU technology (sequence, motion and network)
- High-speed, high-precision, multi-axis motion control with built-in CC-Link IE TSN; 128 axis in 1.2ms
- Advanced cybersecurity for industrial environments to meet IEC62443-4-2 standards
- Future ready connectivity with OPC UA, MQTT *1, MES and Ethernet/IP *2
- Smart diagnostics – AI based maintenance and real time monitoring with web server

Notes: *1 Future support; *2 With RJ71GN11-EIP module

ADVANCED CONNECTIVITY

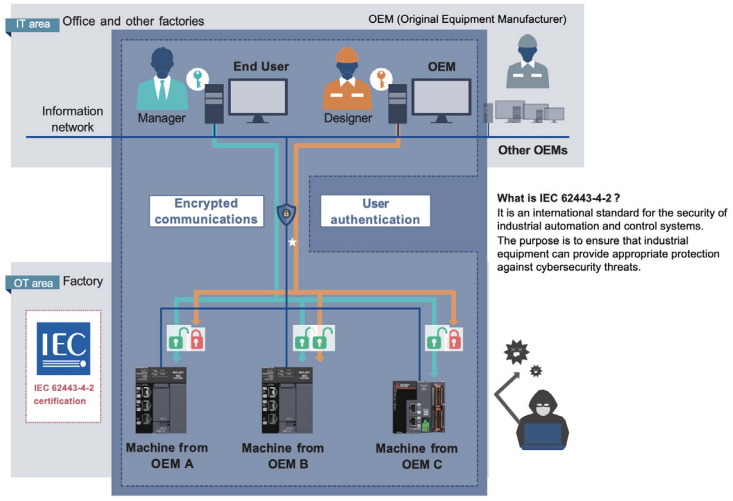
- Diagnostics and maintenance features, including AI, to minimize downtime and improve machine reliability
- IoT capabilities:
  - OPC UA (for SCADA/MEIDS)
  - MES database connectivity *1
  - MQTT (for cloud systems) *1
  - Web server
- Deterministic motion and networking via CC-Link IE TSN front controller port
- Support for network, motion, and HMI labels
- IEC 61131-3 compliant with PLCopen FB support

Note 1: Future support, coming soon.



EMBEDDED CYBERSECURITY

- Built-in cybersecurity to protect assets at the controller level
- Encrypted communication and user authentication
- Role-based access control for both end users and equipment manufacturers
- Startup integrity checks to detect and block tampered programs
- TÜV Rheinland-certified MX-R for IEC 62443-4-1 and IEC 62443-4-2 SL1



MX Controller Model Numbers

Model	MX-R500	MX-R300
Model (Axis)	MXR500-128 (128axes) MXR500-256 (256 axes)	MXR300-16 (16 axes) MXR300-32 (32 axes) MXR300-64 (64 axes)
Target Applications	High-end, multi-axis systems: High-speed packaging, Printing, Pharmaceutical, LiB, Semiconductors, LCDs	General motion control: Food/Packaging, Printing, Automotive (EVs), Electronics
Program Memory	150MB	100MB
Motion Control	Up to 256 axes	Up to 64 axes
Supported Network Stations	Up to 253 (servo, inverter, remote I/O)	Up to 253 (servo, inverter, remote I/O)

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