MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

FACTORY AUTOMATION

Programmable Automation Controllers
MELSEC MX Controller

MX-F Model (with Safety Functions)
MXF100S(-□)-N(P)32



New MX-F Model Featuring

Safety Function Support Now Available

The built-in safety CPU makes it possible for a single unit to perform both standard and safety control.

Lineup

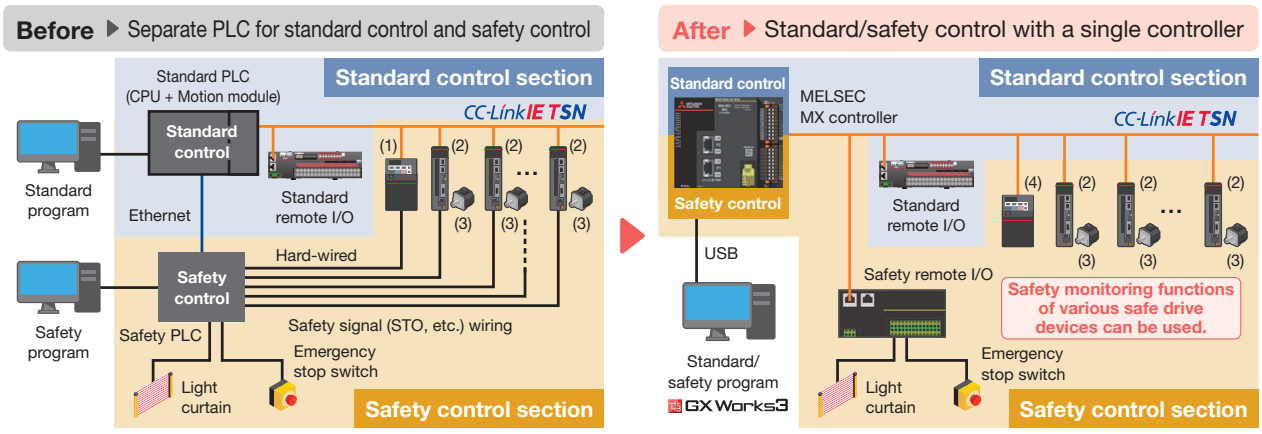
Type	Built-in networks	Safety specifications	Number of control axes	Model	Built-in I/O (standard control) output format*
NEW MX-F model (with safety functions)	• CC-Link IE TSN (with safety functions) • OPC UA • General-purpose Ethernet	• SIL 3 (EN 61508) • PL e/Category 4 (EN ISO 13849-1)	—	MXF100S-N32	Sink output
				MXF100S-P32	Source output
			8 axes	MXF100S-8-N32	Sink output
				MXF100S-8-P32	Source output
			16 axes	MXF100S-16-N32	Sink output
				MXF100S-16-P32	Source output

In combination with the MELSERVO-J5 Series, the safety monitoring functions can be used on a single network.

*: The built-in I/O is a standard function, so it does not support safety standards. When using the safety I/O, use the remote I/O module with safety functions.

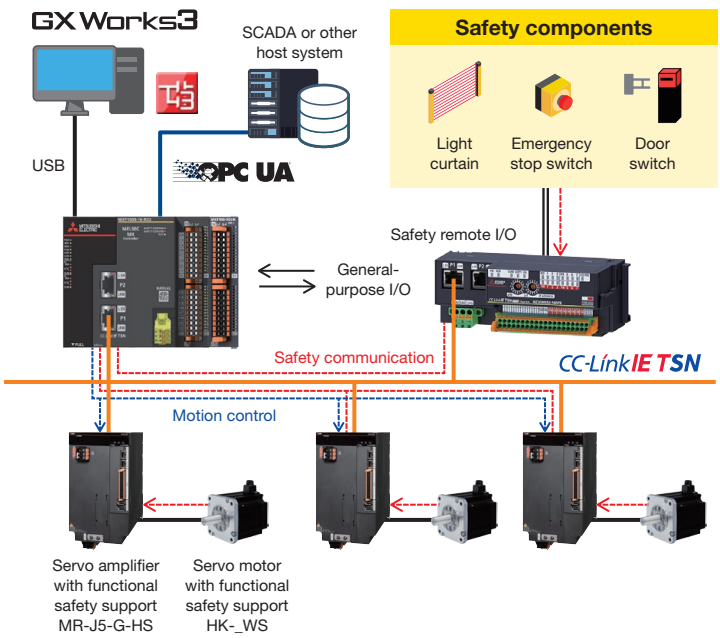
Standard/Safety/Motion Control Integrated in a Single Unit

The MX-F model (with safety functions) integrates standard, safety, and motion control into a single controller, helping streamline wiring, save space, and reduce costs.
With GX Works3, standard/safety control programs can be saved and managed as a single project, improving design efficiency.

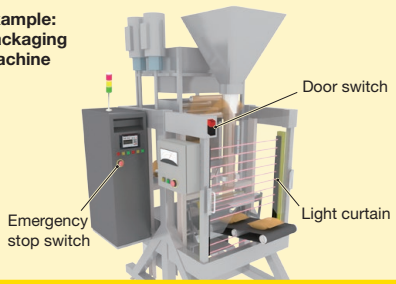


(1) Standard specification inverter: FR-E800
(2) Servo amplifier with functional safety support: MR-J5-G-HS
(3) Servo motor with functional safety support: HK-_WS
(4) Safety communication specification inverter: FR-E800-SCE

■ Example of System Configuration



Example: Packaging machine



Solves shop floor challenges

Challenge 1
Stabilizing packaging quality by synchronizing transport and film cutting
Motion control for up to 16 axes with a single unit

Challenge 2
Reducing downtime by using safety monitoring functions (SS2, SLS, etc.)
Possible with a single network and a single parameter setting

Challenge 3
Protecting assets from cyberattacks
IEC 62443-4-2 certification planned (cybersecurity standard)

etc.

■ Product Specifications

Item			Specifications
Program language	Standard control program		LD, ST, FBD/LD
	Safety control program		LD
Memory capacity	Program memory	Standard	30 MB
		Safety	6 MB
Peripheral device connection ports	USB port		USB 2.0 High-Speed (Type-C) × 1
	Ethernet ports		P1: CC-Link IE TSN port
			P2: Ethernet port or CC-Link IE TSN port
Rated voltage			24 V DC (+20%, -15%)
External dimensions W × H × D (mm)			111 × 90 × 105
Feature summary*	Standard	Data logging function	Supported
		Firmware update function	Supported
	Maintenance	Real-time monitor function	Supported
	Information linkage/ security	User authentication function	Supported
		Encrypted communication function	Supported
		OPC UA server function	Supported (Client function to be supported in the future)
		Recording function	To be supported in the future
		Network drive function	To be supported in the future

*: Safety devices (SA\□) are not supported.

■ Supported Engineering Software

Software	Version
MELSOFT GX Works3	Ver. 1.128J or later

■ Functional Safety

Product name	Safety monitoring function (IEC 61800-5-2)
MELSERVO-J5 Series + Servo motor with functional safety support	STO (Safe torque off)
	SS2 (Safe stop 2)
	SLS (Safely-limited speed)
	SDI (Safe direction)
	SLI (Safely-limited increment)
	SLT (Safely-limited torque), etc.
FR-E800 Series FR-E800-SCE	STO (Safe torque off)
	SS1 (Safe stop 1)
	SBC (Safe brake control)
	SLS (Safely-limited speed)
	SSM (Safe speed monitor)

■ Product List

Model	Specifications
MXF100S-N32	MX-F model (with safety functions), sink output
MXF100S-P32	MX-F model (with safety functions), source output
MXF100S-8-N32	MX-F model (with safety functions), 8 axes, sink output
MXF100S-8-P32	MX-F model (with safety functions), 8 axes, source output
MXF100S-16-N32	MX-F model (with safety functions), 16 axes, sink output
MXF100S-16-P32	MX-F model (with safety functions), 16 axes, source output

⚠ Safety Warning

- To ensure proper use of the products in this document, please be sure to read the instruction manual prior to use.

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