MITSUBISHI ELECTRIC
Changes for the Better

MELSEC Consolidated Catalog

e-F@ctory

Programmable Controller

MELSEC

designed with automation in mind

GLOBAL IMPACT OF MITSUBISHI ELECTRIC

Through Mitsubishi Electric's vision, "Changes for the Better" are possible for a brighter future.

Changes for the Better

"Changes for the Better" represents the Mitsubishi Electric Group's attitude to "always strive to achieve something better", as we continue to change and grow. Each one of us shares a strong will and passion to continuously aim for change, reinforcing our commitment to creating "an even better tomorrow".

Our advances in AI and IoT are adding new value to society in diverse areas from automation to information systems. The creation of game-changing solutions is helping to transform the world, which is why we are honored to be recognized in the 2019 "Forbes Digital 100" as one of world's most influential digital corporations.

#41
2019 Forbes
TOP 100 DIGITAL COMPANIES

Mitsubishi Electric is involved in many areas including the following:

Energy and Electric Systems
A wide range of power and electrical products from generators to large-scale displays.

Electronic Devices
A wide portfolio of cutting-edge semiconductor devices for systems and products.

Home Appliance
Dependable consumer products like air conditioners and home entertainment systems.

Information and Communication Systems
Commercial and consumer-centric equipment, products and systems.

Industrial Automation Systems
Maximizing productivity and efficiency with cutting-edge automation technology.

Committed to ever higher customer satisfaction

Mitsubishi Electric is a global leader in the research, manufacturing and marketing of electrical and electronic equipment used in areas such as communications, consumer electronics, industrial technology, energy and transportation. Within this, the industrial automation business has grown significantly since the first induction motor was manufactured over 90 years ago and has closely followed the automation industry in Japan, Asia, and beyond. Mitsubishi Electric industrial automation boasts a wide-range of product areas such as production control, drives, and mechatronics that are used in various industries. In addition, Mitsubishi Electric offers e-F@ctory and iQ Platform, leveraging its total industrial automation solution portfolio.

Intelligence in everything automated—MELSEC

The MELSEC (Mitsubishi ELectric SEquence Control) brand is well known in the automation industry for robust quality and excellent performance that realizes a reduction in total cost of ownership (TCO). The MELSEC lineup consists of various products, the flagship products being the MELSEC-Q Series and recently introduced MELSEC iQ-R Series. These high-end programmable controllers, mainly used for controlling processes in manufacturing lines and advanced machines are complimented by small- to medium-sized controllers like the MELSEC-L Series, MELSEC-F Series and the new MELSEC iQ-F Series, which are commonly utilized for cell manufacturing and stand-alone applications. Over the years, a main characteristic of the MELSEC Series has been seamless connection, from the sensor level all the way through to Enterprise covering all aspects of manufacturing.

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Maximizing productivity and reducing costs across the entire enterprise

e-F@ctory is the Mitsubishi Electric solution for improving the performance of any manufacturing enterprise by enhancing productivity, and reducing the maintenance and operations costs together with seamless information flow throughout the plant. e-F@ctory uses a combination of factory automation and IT technologies, offering solutions to reduce the total cost of development, production, and maintenance by supporting advanced *Monozukuri**.

e-F@ctory helps to reduce overall costs and is achieved in the following four areas:

* Monozukuri is an initiative started in Japan for promoting its unique manufacturing style for continuous improvement in production processes and operations. The word is derived by combining the words "mono", the thing that is manufactured, and "zukuri", the process of manufacturing

IT system

Reduce energy costs

Energy saving solution

Modern manufacturing depends much on reducing energy costs as a way to realize an efficient manufacturing enterprise. e-F@ctory supports this by allowing visualization of real-time energy usage, helping to reduce the overall energy consumption.

Integrate FA and IT systems at low cost

Edge-computing (FA-IT information connection)

Edge computing enables point-of-origin processing by seamless data collection and analysis, realizing optimization of manufacturing operations improving various elements such as productivity and quality.

Edge-computing

Reduce development, production, and maintenance costs

iQ Platform

The iQ Platform minimizes costs at all phases of the automation life cycle by improving development times, enhancing productivity, reducing maintenance costs, and making information more easily accessible. Integration is at the heart of the iQ Platform, with a highly intelligent controller platform as the core, combined with a seamless communication network and an integrated engineering environment.

Shop floor

iQ Platform

Reduce setup and maintenance costs

iQ Sensor Solution

Easily setup and maintain various types of sensors. Maintenance and design costs can be reduced as compatible iQSS partner sensors can be managed together.

iQSS
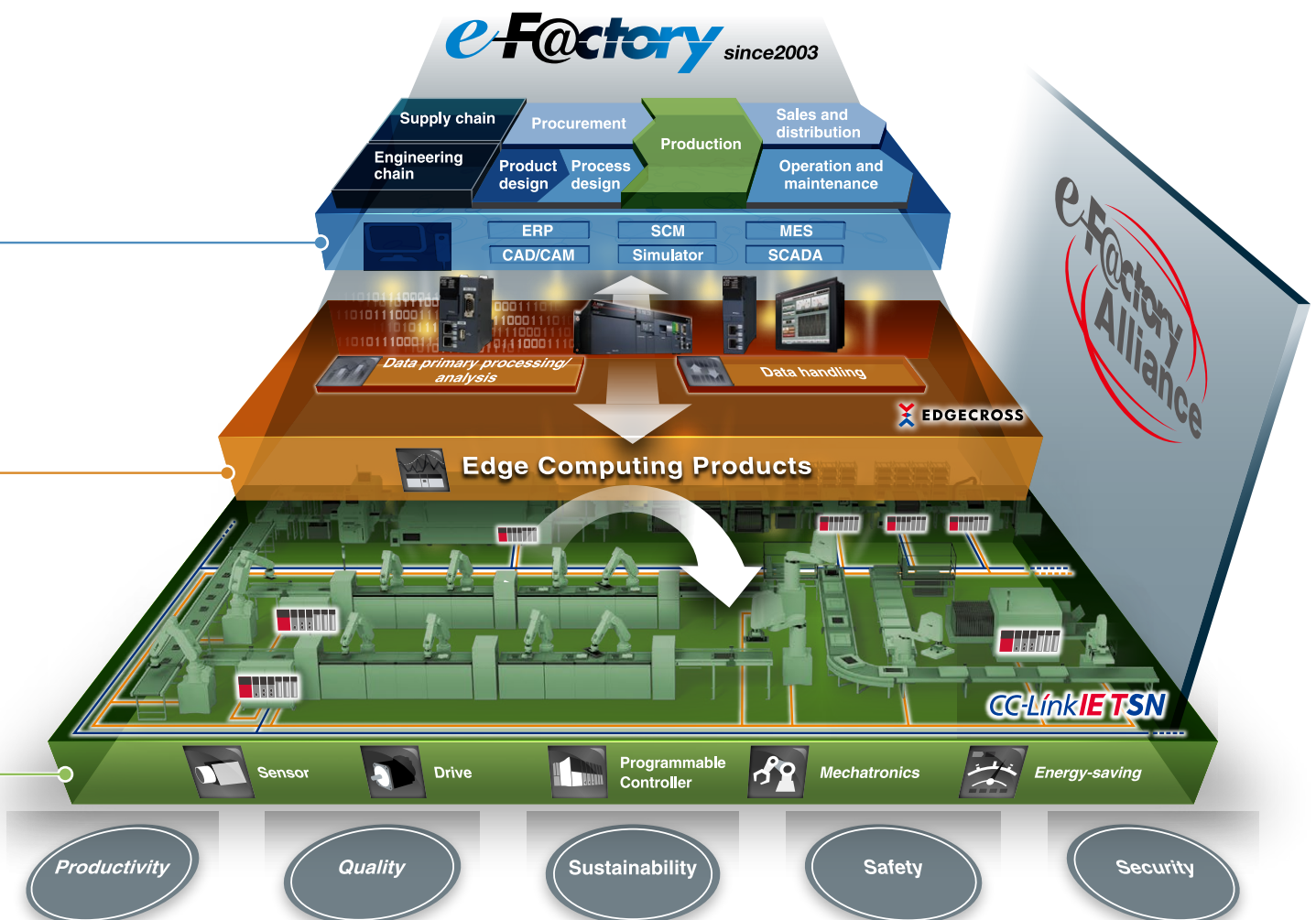
Best-in-class solutions across the ecosystem

e-F@ctory Alliance

The e-F@ctory Alliance is an ecosystem offering best-in-class solutions by combining products between Mitsubishi Electric and its various partners. Close collaboration with such partners broaden the choices for the customer and realize the best solution possible.

MELSEC

Comprehensive controller lineup available to meet customers' requirements, from small-scale and stand-alone to medium- and large-scale systems

Performance

MELSEC Q series

MELSEC iQ-F series

MELSEC L series

MELSEC-F

Application-specific CPUs

Safety CPU*1   Process/SIL2 Process CPU   C Controller   MELSECWinCPU   Motion CPU

iQ Platform

These best-in-class CPUs, integrated into the iQ Platform, are designed for specific needs across various different industry areas.

*1. R□SFCPU-SET includes both a safety CPU and safety function module

MELSEC iQ-R series

Optimum automation control area

System size

Robot CPU   CNC CPU

Medium- to large-scale control

▌ MELSEC iQ-R Series

A next-generation programmable automation controller (PAC), the MELSEC iQ-R Series incorporates a revolutionary high-speed system bus that improves productivity through advanced performance and functionality.

▌ MELSEC-Q Series

The first to incorporate the multiple CPU architecture, the MELSEC-Q Series wide-range of CPUs enables control of multiple operations, improving the performance and scalability of the overall production system.

Small- to medium-scale control

▌ MELSEC-L Series

The MELSEC-L Series is a baseless highly scalable controller ideal for applications having limited space. With various I/O functionality embedded into the CPU head, exceptional cost versus performance is achieved in a compact body.

Small-scale and stand-alone

▌ MELSEC iQ-F Series

Designed to provide outstanding performance and superior drive control, the MELSEC iQ-F Series is a high-performance compact-class controller with a rich assortment of integrated functions.

▌ MELSEC-F Series

Incorporating abundant features with a flexible system configuration, the MELSEC-F Series has a power supply, CPU and I/Os into a single compact body. Furthermore, a diverse range of options are available to further expand its capabilities.

MELSEC Designed with automation in mind

Mitsubishi Electric offers a wide range of controllers capable of satisfying the diversified application needs in various industries. The high-speed, high-accuracy controllers in the MELSEC series covers them all, providing highly flexible cost-effective solutions.

iQ-R : MELSEC iQ-R Series	**Q** : MELSEC-Q Series	**L** : MELSEC-L Series	**iQ-F** : MELSEC iQ-F Series	**F** : MELSEC-F Series
S : Safety	**P** : Process/Redundant system	**C** : C Controller	**M** : Servo system controller	**R** : Robot controller
N : CNC CPU				

Automotive

iQ-R **Q** **S** **M** **R** **N**

Improve productivity and realize flexibility in different automotive assembly lines with high-accuracy motion control, including linear/circular interpolation and electric cam profile.
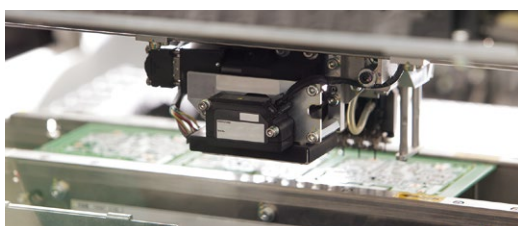
Food and beverage, CPG

iQ-R **Q** **L** **iQ-F** **F** **P** **M**

Realize improvements in various packaging applications such as high-speed filling, which requires a highly accurate, continuous feed rate and precision.

Pick-and-place

iQ-R **M**

Achieve highly precise, fast and accurate placement of components in various sizes and shapes such as that required by SMT pick-and-place equipment, further improving productivity.

Automated warehouse

iQ-R **Q** **iQ-F** **F** **C** **M** **R**

Realize advanced logistics coordination and eliminate errors in repetitive processes. Servo-based high-speed material handling and highly accurate positioning improving productivity and reduce energy consumption.

Semiconductor

iQ-R **Q** **S** **C** **M**
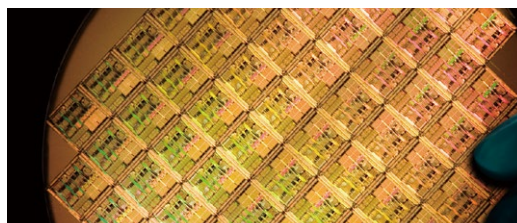
Reduce maintenance costs using the high-durability MELSEC Series. Having the compact, robust design desired for semiconductor manufacturing, MELSEC products solve the small footprint, high-performance requirements.

Flat panel display (FPD)

iQ-R **Q** **S** **C** **M** **R**

Improve the large data bandwidth and high performance requirements common in FPD manufacturing processes using MELSEC's integrated control platform. The integrated controller and network solution offer increased flexibility and enhanced performance.

Chemical

`iQ-R` `Q` `P`

Improve control of processes involving chemical manufacturing using highly scalable solutions that integrate process control and factory automation.
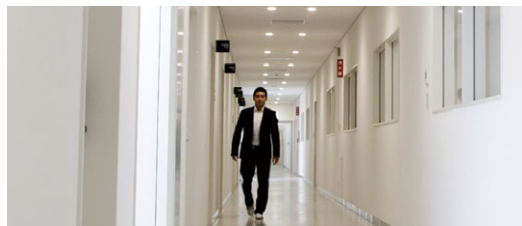
Renewable energy

`iQ-R` `P` `C`

Easily integrate renewable energy plant management utilizing plant-wide data acquisition and extensive real-time control, thereby reducing overall investment and maintenance costs.

Printing

`iQ-R` `Q` `C` `M`

Realize high-speed, high-quality printing through various solutions offered depending on the printing process involved such as roll paper feed-in, offset printing, binding, and sortation.

Machine tool

`iQ-R` `Q` `L` `iQ-F` `F` `N`
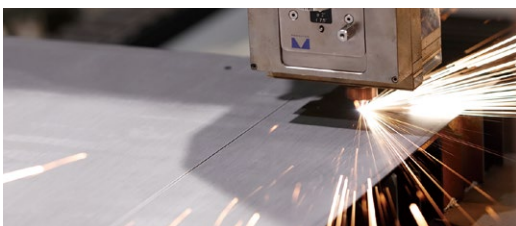
Improve productivity, operating efficiency and overall equipment effectiveness using the scalable control of MELSEC products, supporting tasks such as drilling, grinding, and milling

Inspection machines

`iQ-R` `C`

Easily integrate Inspection machine control into automated systems, thereby reducing maintenance and overall operational costs.

Building automation

`iQ-R` `Q` `L` `iQ-F` `F` `C`

Increase security and ensure effective use of energy management capabilities by supporting various building automation protocols, resulting in a reduced carbon footprint.

Injection molding

`iQ-R` `Q` `iQ-F` `F` `M`

Achieve reductions in machine operation costs and improve productivity by integrating MELSEC controllers that utilize an easy-to-use control platform combined with highly accurate motion control.

General automation

`iQ-R` `Q` `L` `iQ-F` `F` `C`

Alternative automation applications such as automatic car washes and automated hydroponic farming require a high-level of automation similar to industrial solutions.

MELSEC Selection Guide

Controller lineup

Series	Modular type	Modular type	Baseless type
	MELSEC iQ-R	MELSEC-Q	MELSEC-L
	PAC (Programmable automation controller)	Programmable controller CPU	Programmable controller CPU

Lineup	• Programmable controller CPU
	• CC-Link IE embedded CPU
	• Safety CPU
	• Process CPU[*1]
	• SIL2 Process CPU
	• C Controller
	• MELSECWinCPU
	• Motion CPU
	• Robot CPU
	• CNC CPU
		• Programmable controller CPU
		  (Universal model)
		• Process CPU
		• C Controller
		• Motion CPU
		• Robot controller
		• CNC CPU
			• Programmable controller CPU
			  Sink type
			  Source type

Control method	Stored program cyclic operation	Stored program cyclic operation	Stored program cyclic operation
I/O control mode	Refresh mode	Refresh mode	Refresh mode
Programming language	• Ladder diagram • Structured text (ST) • Sequential function chart (SFC)[*2] • Function block diagram (FBD/LD) • Function block (FB) • C/C++[*4]	• Ladder diagram • Structured text (ST) • Instruction list • MELSAP3 (SFC), MELSAP-L • Function block diagram (FBD) • Function block (FB) • C/C++[*4]	• Ladder diagram • Structured text (ST) • Instruction list • MELSAP3 (SFC), MELSAP-L • Function block (FB)
Engineering environment	MELSOFT GX Works3 MELSOFT MT Works2 CW Workbench	MELSOFT GX Works2 MELSOFT PX Developer MELSOFT MT Works2 CW Workbench	MELSOFT GX Works2
Program size (K step)	1200	1000	260
Number of I/O points (X/Y) (point)	4096	4096	4096
Device/label memory/standard RAM (K byte)	3380	1792	768
Data memory/standard ROM (byte)	40M	16M	2M
Processing speed			
LD instruction (ns)	0.98	1.9	9.5
MOV instruction (ns)	1.96	3.9	19
Floating point addition (µs)	0.01	0.014	0.057
Memory interface			
Extended SRAM cassette	●	●[*3]	—
SD memory card	●	●[*3]	●[*6]
SRAM card, FLASH card, ATA card	—	●[*5]	—
External interface			
USB	●	●	●
Ethernet (1000BASE-T[*7]/ 100BASE-TX/10BASE-T)	●	●[*8]	●[*6]
RS-232	●[*9]	●[*10]	●[*11]
RS-422/485	—	—	—
Display unit	—	—	●
CC-Link IE connection port			
Ethernet (1000BASE-T/100BASE-TX/10BASE-T)	●[*13]	—	—
Network connectivity (adapter/module)			
Ethernet (1000BASE-T[*14]/100BASE-TX/10BASE-T)	●	●	●
CC-Link IE TSN	●	—	—
CC-Link IE Control	●	●	—
CC-Link IE Field	●	●[*15]	●
CC-Link	●	●	●
SSCNETⅢ/H	●	●	●
AnyWire	●	●	●
BACnet®	●	●	●
MODBUS®/TCP	●	●	●
MODBUS®	●	●	●
General specifications			
Operating ambient temperature	0...55°C (60°C[*17])	0...55°C	0...55°C
Key features/functions	• Line manufacturing • Distributed control • Small-scale I/O control • Large-scale I/O control • Security • Inter-modular sync • Built-in database • Integrated network • Multiple CPU • Process control • High-reliability control • C programming • Data logging • IT gateway • Advanced motion • Safety • Real-time monitor	• Line manufacturing • Distributed control • Large-scale I/O control • Integrated network • Multiple CPU • Process control • C programming • Data logging • IT gateway • Advanced motion	• Machine control • Distributed control • Small-scale I/O control • Large-scale I/O control • Space/cost saving • Integrated network • Extensive built-in functions • Data logging • Motion control • Real-time monitor

*1. Supports redundant system when paired with R6RFM
*2. SFC is not supported in redundant mode and by safety CPU
*3. Q□UDVCPU only.
*4. When using CW Workbench
*5. Does not support QnUDVCPU and certain models
*6. Does not support L02SCPU(-P)
*7. Supports the user Ethernet port of Q24DHCCPU-V/VG/LS and Q26DHCCPU-LS only
*8. Supports Q□UDE(H)CPU and Q□UDVCPU only
*9. Supports C Controller and MELSECWinCPU only
*10. Does not support Q□UDE(H)CPU and Q□UDVCPU
*11. Supports L02SCPU(-P) only

Compact type		Compact type		
MELSEC iQ-F		MELSEC-F		
Programmable controller CPU		Programmable controller CPU		
FX5UJ	FX5U/FX5UC	FX3S	FX3G/FX3GC	FX3U/FX3UC
• FX5UJ (screw terminal block type)	• FX5U (screw terminal block type) • FX5UC (connector type) • FX5UC (spring clamp terminal block type)	• FX3S	• FX3G • FX3GC	• FX3U • FX3UC
Stored program cyclic operation		Stored program cyclic operation		
Refresh mode		Refresh mode		
• Ladder diagram • Structured text (ST) • Function block diagram (FBD/LD) • Function block (FB)	• Ladder diagram • Structured text (ST) • Function block diagram (FBD/LD) • Function block (FB) • Sequential function chart (SFC)	• Ladder diagram • Structured text (ST) • SFC for FX Series • Function block (FB)		
MELSOFT GX Works3		MELSOFT GX Works2		
48	64/128	4	32	64
256	384	30	128	256
120	150	—	—	—
5M	5M	—	—	—
34	34	210	210	65
34	34	520	520	640
3.692	3.967	11.96	11.96	14.2
—	—	●	●*12	●
●	●	—	—	—
—	—	—	—	—
●	—	●	●	—
●	●	—	—	—
—	—	—	—	—
—	●	●	●	●
—	—	●	●*12	●
—	—	—	—	—
●	●	●	●	●
—	●	—	—	—
—	—	—	—	—
●	●	—	—	—
●	●	—	●	●
●	●	—	—	●*16
●	●	—	●	●
●	●	—	—	—
●	●	—	—	—
●	●	●	●	●
0...55°C	−20...55°C*18	0...55°C	0...55°C	0...55°C
• Machine control • Distributed control • Small-scale I/O control • Space/cost saving • Security • Integrated network • Extensive built-in functions • Motion control		• Machine control • Small-scale I/O control • Space/cost saving • Motion control		

*12. Supports FX3G only
*13. R□ENCPU only.
*14. Supports the MELSEC iQ-R Series only
*15. Does not support Q□(P)(H)CPU and Q□PRHCPU

*16. Supports SSCNETIII
*17. Only supported when used together with extended temperature range main/extension base units
*18. Operating ambient temperature from −20°C is supported by products produced from June 2016 (serial number "166" or later). For details, on supported products, please refer to the relevant product manual.

MELSEC iQ-R series

Bridging the next generation of automation

iQ Platform

Revolutionary, next-generation controllers building a new era in automation

To succeed in highly competitive markets, it's important to build automation systems that ensure high productivity and consistent product quality. The MELSEC iQ-R Series has been developed from the ground up based on common problems faced by customers and rationalizing them into seven key areas: Productivity, Engineering, Maintenance, Quality, Connectivity, Security and Compatibility. Mitsubishi Electric is taking a three-point approach to solving these problems: Reducing TCO[1], increasing Reliability and Reusability of existing assets. As a bridge to the next generation in automation, the MELSEC iQ-R Series is a driving force behind revolutionary progress in the future of manufacturing.

*1. Total Cost of Ownership

Process
High-availability process control in a scalable automation solution
- Extensive visualization and data acquisition
- High-availability across multiple levels
- Easier maintenance and programming with integrated engineering software

Safety
System design flexibility with integrated safety control
- Integrated general and safety control
- Consolidated network topology
- Complies with international safety standards

Intelligence
Extensive data handling from shop floor to business process systems
- Direct data collection and analysis
- C/C++ based programming
- Collect factory data in real-time
- Expand features using third party partner applications

Productivity
Improve productivity through advanced performance/ functionality
- High-speed system bus realizing shorter cycle time
- Super-high-accuracy motion control utilizing advanced multiple CPU features
- Inter-modular synchronization resulting in increased processing accuracy

Engineering
Reducing development costs through intuitive engineering
- Intuitive engineering environment covering the product development cycle
- Simple point-and-click programming architecture
- Understanding globalization by multiple language support

Maintenance
Reduce maintenance costs and downtime utilizing easier maintenance features
- Visualize entire plant data in real-time
- Extensive preventative maintenance functions embedded into modules

Quality
Reliable and trusted MELSEC product quality
- Robust design ideal for harsh industrial environments
- Improve and maintain actual manufacturing quality
- Conforms to main international standards

Connectivity
Open integrated networking across the manufacturing enterprise
- High-speed/high-accuracy motion control reduces cycle time
- Flexible IIoT system configuration
- Improved system usability with engineering software

Security
Robust security that can be relied on
- Protect intellectual property
- Unauthorized access protection across distributed control network

Compatibility
Extensive compatibility with existing products
- Utilize existing assets while taking advantage of cutting-edge technology
- Compatible with most existing MELSEC-Q Series I/O
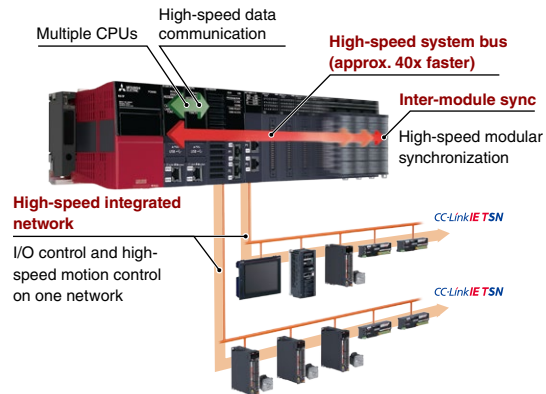
■ **Key features/functions**

Line manufacturing	Machine control	Distributed control	Small-scale I/O control	Large-scale I/O control	Space/cost saving	Security
Inter-modular sync	Built-in database	Integrated network	Multiple CPU	Process control	High-reliability control	Extensive built-in functions
C programming	Data logging	IT gateway	Motion control	Advanced motion	Safety	Real-time monitor

High-speed/high-accuracy processing improves productivity

The high-speed system bus is approx. 40-times faster compared to existing models, achieving very fast and large-capacity data processing between CPU modules or network modules. In addition, CC-Link IE TSN realizes I/O control and high-speed motion control on one network.

Multiple CPUs

High-speed data communication

High-speed system bus (approx. 40x faster)

Inter-module sync
High-speed modular synchronization

High-speed integrated network
I/O control and high-speed motion control on one network

CC-Link IE TSN

CC-Link IE TSN

Built-in database eliminates the need for a PC-based database server

Recipe data and production results data, previously managed using a database server, can now be managed via the database in the programmable controller. Use of dedicated commands for the built-in database makes it easy to search, add and update data on the fly.

• Recipe
• Production data

TRG
DBSELECT
DB

Powerful security features protecting intellectual property

Functions such as hardware security key identification for protecting programs and an IP filter for preventing unauthorized access to the control system through the network are incorporated to protect customers intellectual property whilst ensuring secure and safe control throughout the plant.

Extended SRAM cassette with registered security key

Intuitive and easy engineering

With GX Works3 graphic based programming cannot be made any easier with various intuitive features such as graphic based system configuration, and an extensive module library provided as standard. In addition to multiple language support realizing a global engineering software required for current automation needs.

GX Works3
One Software, Many Possibilities
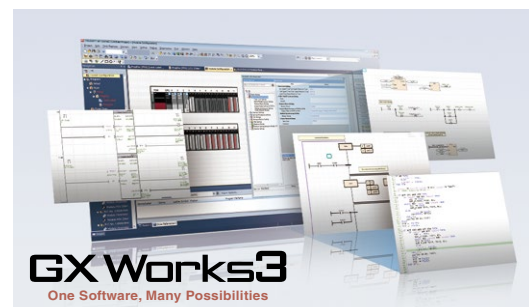
A wide range of modules supporting various different applications

The MELSEC iQ-R Series is a modular control system equipped with various modules such as CPUs, power supply, digital I/O, analog I/O and base unit and intelligent function modules, each having its own responsibility in the system. The core of the system is a base unit that interconnects all of the modules together and enables high-speed communications between each module. From small to large systems, scalability is simple. Up to seven extension bases can be connected and a maximum of 64 modules installed at any one time. An RQ extension base is also available, ensuring compatibility with existing MELSEC-Q Series modules.

R00CPU
Program capacity 10K steps

R01CPU
Program capacity 15K steps

R02CPU
Program capacity 20K steps

R04CPU
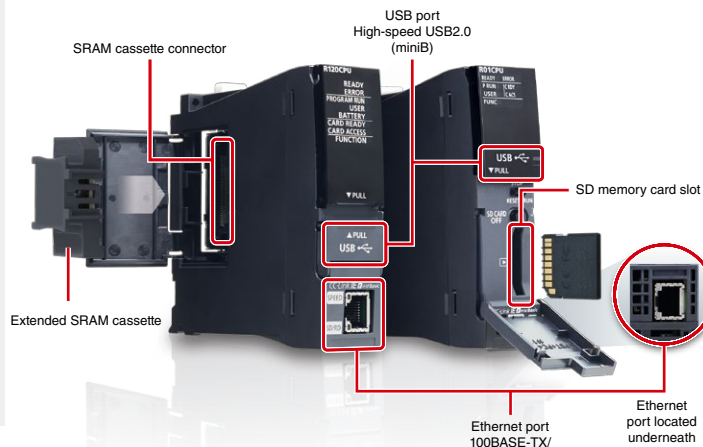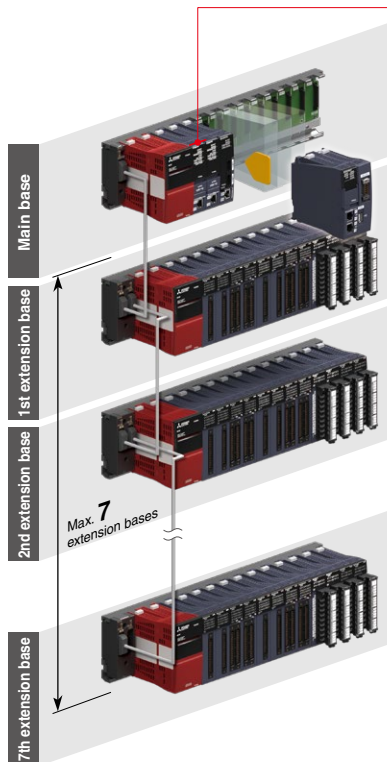Program capacity 40K steps

R08CPU
Program capacity 80K steps

R16CPU
Program capacity 160K steps

R32CPU
Program capacity 320K steps

R120CPU
Program capacity 1200K steps

R04ENCPU
Program capacity 40K steps, CC-Link IE embedded

R08ENCPU
Program capacity 80K steps, CC-Link IE embedded

R16ENCPU
Program capacity 160K steps, CC-Link IE embedded

R32ENCPU
Program capacity 320K steps, CC-Link IE embedded

R120ENCPU
Program capacity 1200K steps, CC-Link IE embedded

SRAM cassette connector

USB port
High-speed USB2.0
(miniB)

SD memory card slot

Extended SRAM cassette

Ethernet port
100BASE-TX/
10BASE-T

Ethernet
port located
underneath

MELSEC iQ-R series

■ System configuration

Main base

1st extension base

2nd extension base

7th extension base

Max. **7** extension bases

■ CPU modules
Install up to four CPU modules together

- Programmable controller CPU
- CC-Link IE embedded CPU[1]
- Motion CPU
- Process CPU
- SIL2 Process CPU[2]
- Safety CPU[3]
- C Controller
- MELSECWinCPU
- Robot CPU
- CNC CPU

[1]. Multi-CPU is not supported.
[2]. Product package includes a SIL2 process CPU and SIL2 function module.
[3]. Product package includes a safety CPU and safety function module.

■ Power supply module
- Power supply module

■ I/O modules, etc.
- Input
- Output
- I/O combined
- Analog input
- Analog output
- Temperature input
- Temperature control
- Motion
- Simple motion
- Positioning
- High-speed counter
- Channel isolated pulse input
- Flexible high-speed I/O control
- Energy measuring

■ Base units
- Main base
- Extended temperature range main base

- Extension base
- Extended temperature range extension base
  An extension base strictly for I/O and intelligent function modules.

- RQ extension base
  An extension base for MELSEC-Q Series modules (further extensions requiring the MELSEC-Q Series extension base version).

■ Network modules, advanced information modules, etc.
- CC-Link IE TSN master/local
- CC-Link IE TSN Plus master/local
- CC-Link IE Control Network
- CC-Link IE Field Network master/local
- CC-Link IE Field Network remote head
- CC-Link system master/local
- AnyWireASLINK master
- MELSECNET/H network
- BACnet®
- EtherNet/IP network interface (scanner)
- CANopen®
- DeviceNet master/slave
- PROFIBUS-DP
- PROFIBUS-IO
- GP-IB interface
- Ethernet interface
- Serial communication
- C intelligent function
- Recorder
- Camera recorder
- MES interface
- OPC UA server
- High-speed data logger
- High-speed data communication

Integrated safety control

The MELSEC iQ-R Series safety control system consists of a safety CPU that is compliant with international safety standards, ISO 13849-1 PL e and IEC 61508 SIL 3 and can execute both safety and general logic in the same CPU. The CPU module paired with the safety function module enables safety control and can be installed on a standard base unit realizing integration into an existing or new control system. Safety I/Os are controlled via CC-Link IE TSN connected to dedicated safety remote I/Os.

CPU	Safety remote I/O
• Safety CPU	• Safety remote I/O module

CC-Link**IE** **T** **SN**

MELSEC iQ-R Series (Safety CPU)

CC-Link**IE** **T** **SN**

Safety remote I/O

General remote I/O

Safety remote I/O

——— Safety I/O ———   ——— General I/O ———

Enabling switch   Switch

Emergency stop switch   Indicator light

Safety light curtain

Door lock switch
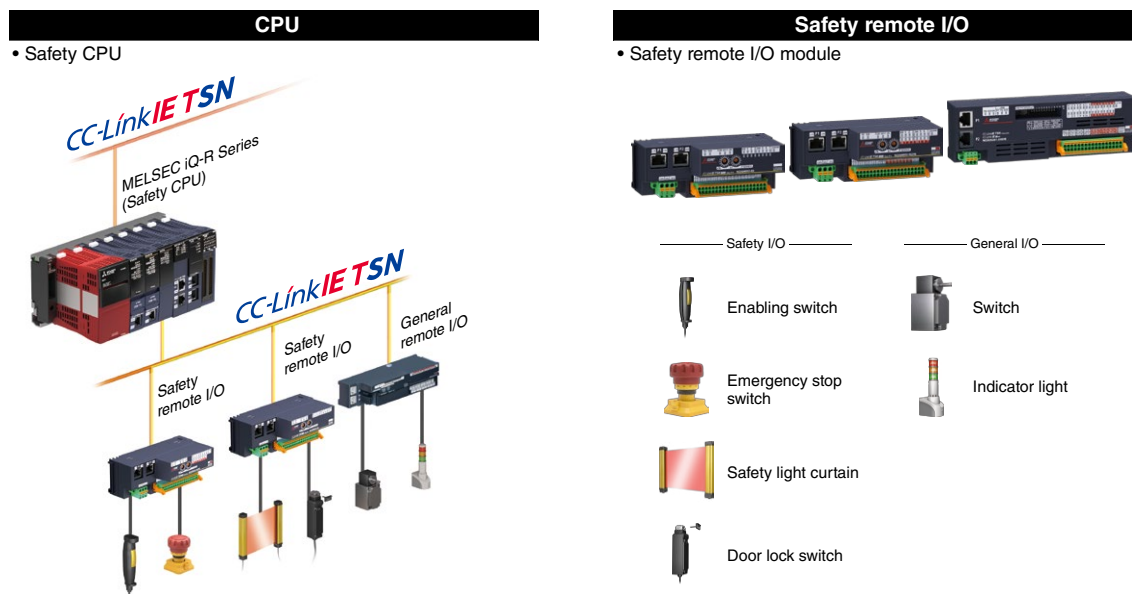
Highly-scalable redundant control

The MELSEC iQ-R Series redundant control system is based on a dual-system architecture where all modules on a primary system are duplicated onto a second or standby system with a tracking cable conn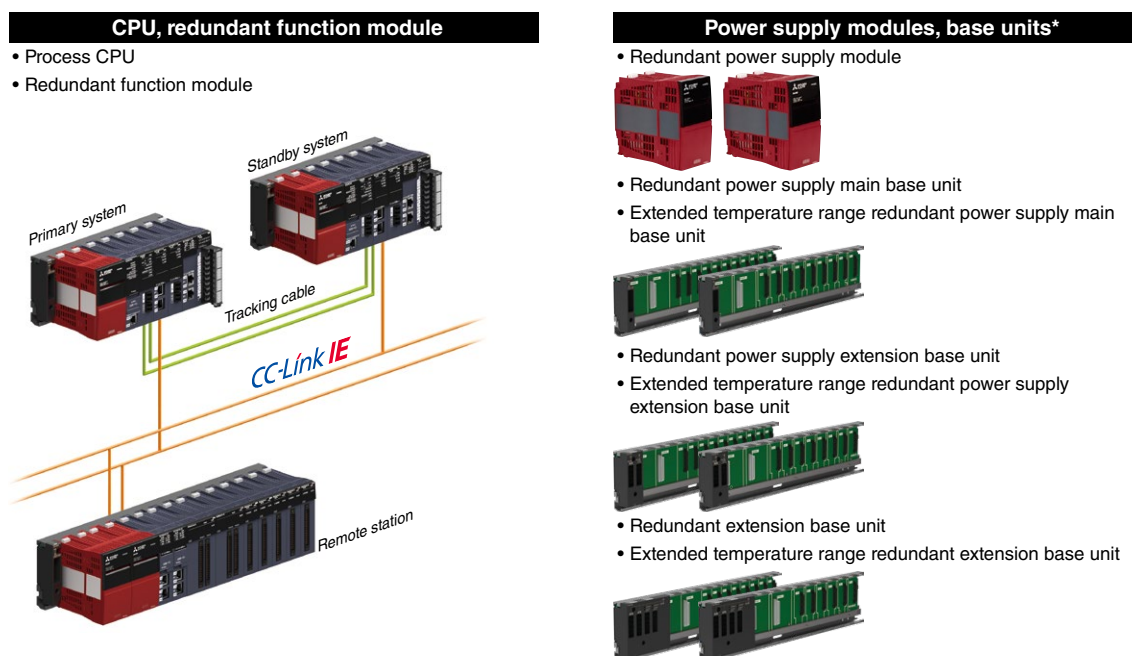ecting the systems together. Both systems consist of the process CPU module and redundant function module, with the CPU module able to execute standard logic and process control. Remote I/O is controlled via the CC-Link IE Field Network, and dedicated base units supporting redundant power supplies come in either standard or extended temperature models.

CPU, redundant function module	Power supply modules, base units*
• Process CPU	• Redundant power supply module
• Redundant function module	

Standby system

Primary system

Tracking cable

CC-Link **IE**

Remote station

• Redundant power supply main base unit
• Extended temperature range redundant power supply main base unit

• Redundant power supply extension base unit
• Extended temperature range redundant power supply extension base unit

• Redundant extension base unit
• Extended temperature range redundant extension base unit

* For more information about supported modules for each base unit, please refer to the relevant product manual.

Complex processes can be realized with advanced synchronous control

The inter-module synchronization function allows the input or output timing of various I/O modules and advanced information modules to be synchronized with the program execution timing of CPU modules. This realizes high-accuracy control of the system and equipment. Use of the CC-Link IE TSN realizes network-level synchronization, providing node-level synchronization that ensures deterministic data flow void of any influence from data transmission del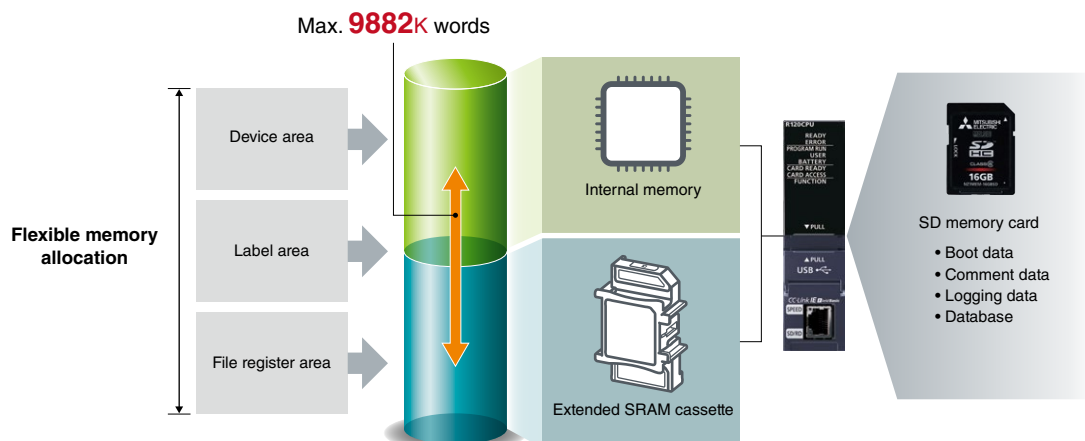ays. Ideal for applications such as "cutting and folding" inside an offset printer, which requires synchronization between the printing quality sensor, high-speed rotary cutter, folding roller and conveyor.

Cutting and folding process

Printing quality inspection sensor

*CC-Link**IE TSN***

*CC-Link**IE TSN***

Reject mechanism
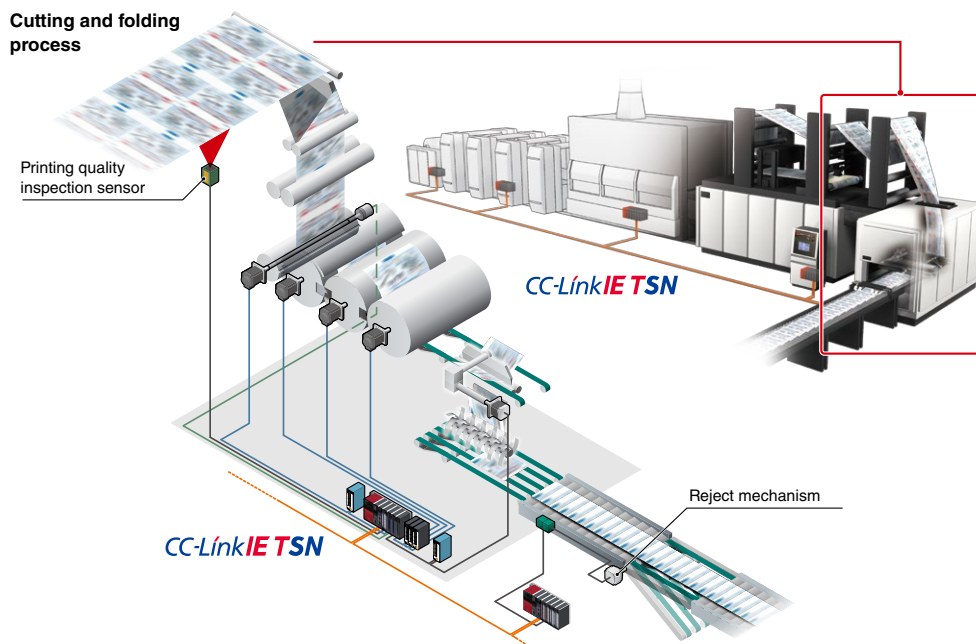
Easy programming with flexible, large-capacity data storage

The MELSEC iQ-R Series programmable controller CPU module is designed to allow an external SRAM cassette to be installed directly into the CPU module. This option makes it possible to increase internal device memory up to 9882K words, expanding device/label memory even further. Management of programmable controller internal data is quite flexible, making programming even easier by allowing various data area allocations to be changed within the CPU memory and SRAM cassette. Use of an SD memory card expands data logging memory, which allows data analysis by computer.

Max. **9882**K words

Flexible memory allocation

Device area

Label area

File register area

Internal memory

Extended SRAM cassette

SD memory card

• Boot data
• Comment data
• Logging data
• Database

Easy data management utilizing internal database (DB)

Recipe data and production data, previously managed using a database server, can now be managed via the database in the programmable controller. This feature allows a selection of database commands that can add/update/search/delete records to be utilized for simple recipe functions. Accessing the CPU internal database data from a computer with Access® or Excel® is supported. Utilized for changing recipe data and production management in the food and beverage industry where multiple product variations are produced using the same machine process.
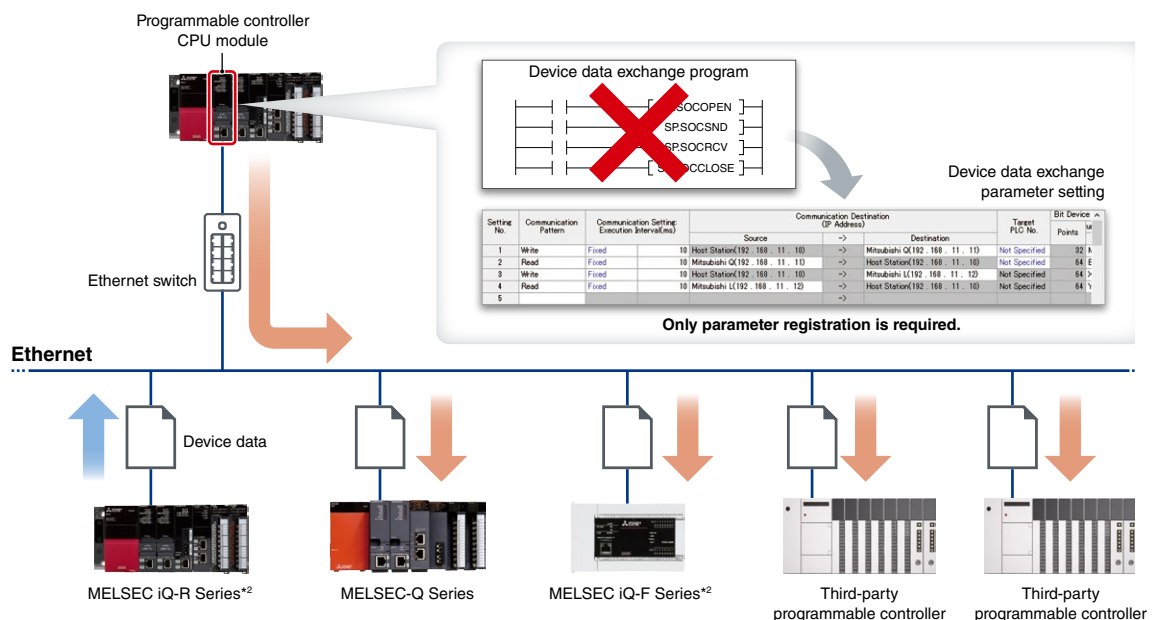

Application

Computer

Production data

SD memory card

DB Database

An internal database is installed into the SD memory card

Data such as recipe data change

Access the database using either Access®, Excel®, or custom applications

Programmable controller CPU module

Reflect production instruction changes

Equipment

Equipment
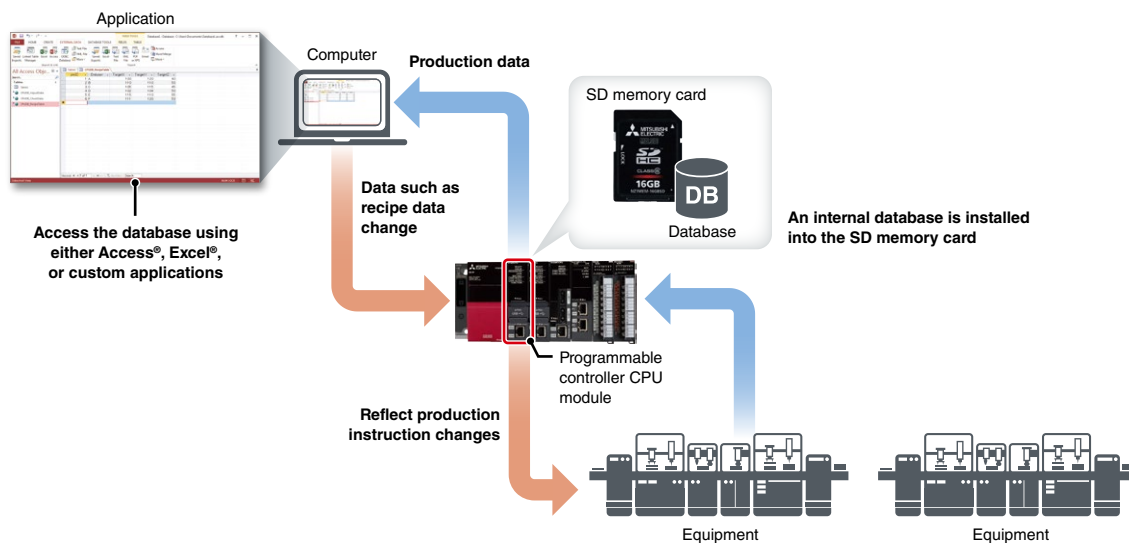
Easy data coordination with third-party programmable controllers just by registering parameters

The programmable controller CPU module allows device data exchange by parameter registration with Mitsubishi Electric programmable controllers and third-party programmable controllers (simple CPU communication function)[*1]. Data collection is easier without changing programs of the existing programmable controllers.

*1. For the list of connectable devices, please see the link below
www.MitsubishiElectric.com/fa/ref/ref.html?k=plcr&pmerit=simple_cpu_com

Programmable controller CPU module

Device data exchange program

SP.SOCOPEN
SP.SOCSND
SP.SOCRCV
SP.SOCCLOSE

Device data exchange parameter setting

Only parameter registration is required.

Ethernet switch

Ethernet

Device data

MELSEC iQ-R Series[*2]

MELSEC-Q Series

MELSEC iQ-F Series[*2]

Third-party programmable controller

Third-party programmable controller

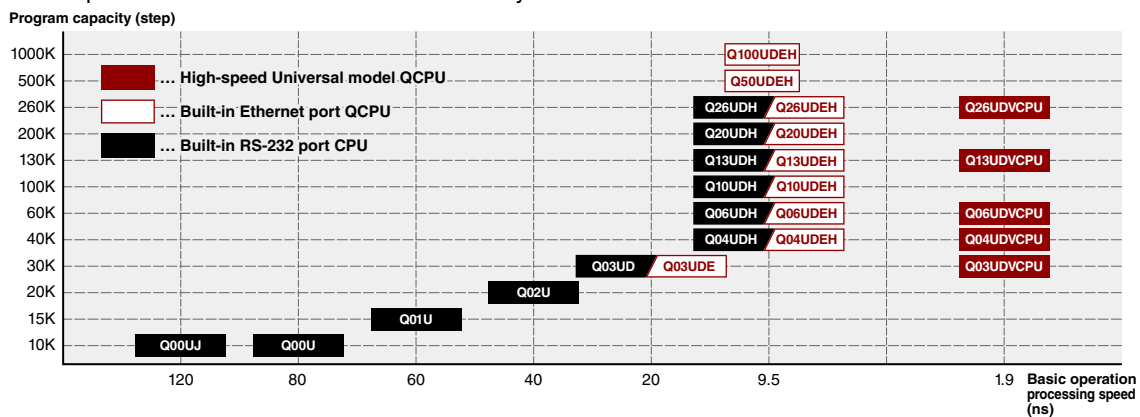*2. Supported by the embedded Ethernet port only.
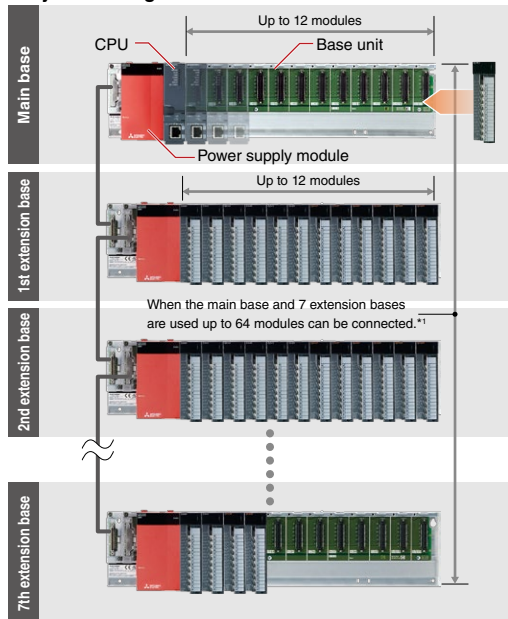
17

MELSEC Q series

iQ Platform

Productivity, usability, and maintenance cost

The MELSEC-Q Series, which has been used by many customers since its release in 1999, has promoted automation and contributed to economic growth. In 2014, the high-speed and highly functional MELSEC-QnU Series was released and its range of products are ideal for applications requiring high quality and stable operation that are well received in a variety of industries.

Program capacity (step)

- ... High-speed Universal model QCPU
- ... Built-in Ethernet port QCPU
- ... Built-in RS-232 port CPU

Q100UDEH
Q50UDEH
Q26UDH Q26UDEH Q26UDVCPU
Q20UDH Q20UDEH
Q13UDH Q13UDEH Q13UDVCPU
Q10UDH Q10UDEH
Q06UDH Q06UDEH Q06UDVCPU
Q04UDH Q04UDEH Q04UDVCPU
Q03UD Q03UDE Q03UDVCPU
Q02U
Q01U
Q00UJ Q00U

Basic operation processing speed (ns)

■ System configuration

Main base
CPU — Base unit
Up to 12 modules
Power supply module

1st extension base
Up to 12 modules

2nd extension base
When the main base and 7 extension bases are used up to 64 modules can be connected.*1

7th extension base

■ CPU modules

Install up to four CPU modules together
- Programmable controller CPU
- Motion CPU
- Process CPU
- C Controller
- Robot controller
- CNC CPU

Up to 4 modules

The 2nd and subsequent CPUs can be installed using slots No. 0 to 2
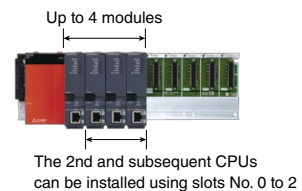
■ Base units*2

- Main base (3, 5, 8, 12)
- Multiple CPU high-speed main base (5, 8, 12)
- Slim type main base (2, 3, 5)
- Redundant power main base (8)
- Extension base (2, 3, 5, 8, 12)
- Redundant power extension base (8)

■ Power supply modules

- Power supply
- Power supply with life function
- Slim type power supply
- Redundant power supply

■ I/O & intelligent function modules

- I/O module
- Interrupt module
- Analog I/O module
- Load cell input module
- CT input module
- Temperature input module
- Temperature control module
- Loop control module
- Simple motion module
- Positioning module
- High-speed counter module
- Channel isolated pulse input module
- Energy measuring module
- Isolation monitoring module
- MES interface module
- High-speed data logger module
- Web server module
- Intelligent communication module
- Network module

*1. The maximum number of modules that can be installed depends on the CPU configuration.
*2. The number within brackets is the number of slots.

■ **Key features/functions**

Line manufacturing	Machine control	Distributed control	Small-scale I/O control	Large-scale I/O control	Space/cost saving	Security
Inter-modular sync	Built-in database	Integrated network	Multiple CPU	Process control	High-reliability control	Extensive built-in functions
C programming	Data logging	IT gateway	Motion control	Advanced motion	Safety	Real-time monitor

For further details, please refer to the catalog below.

"Programmable Controllers MELSEC-Q series [QnU]: L(NA)08101E"

Multiple CPUs

High-speed synchronized control between multiple CPUs independent of control programming (0.88 ms operation cycle)[1] is achieved. This multiple CPU high-speed communication is synchronized with motion control to maximize computational efficiency.
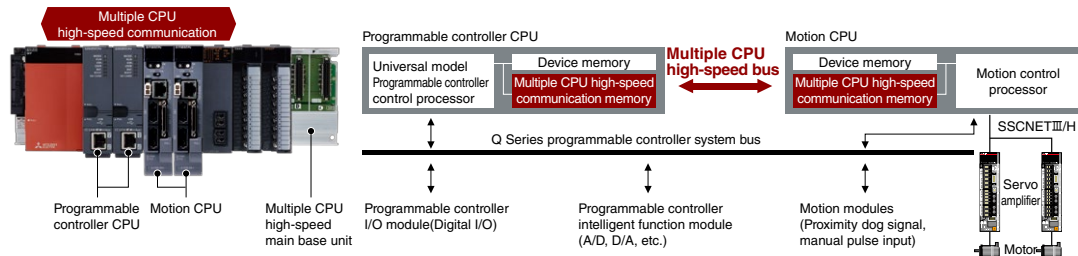

*1. Q00UJ, Q00U, Q01U, and Q02U are not supported.

Large data volume at high-speed

When an 8 MB extended SRAM cassette[2] is installed in the High-Speed Universal model QCPU, the standard RAM can be as one continuous file register with up to 4736K words capacity, simplifying the user program. Even if device memory is insufficient, the file register area can be expanded easily by installing an extended SRAM cassette.

High-speed Universal model QCPU

Access a max. 4736K words device memory as a continuous area

Continuously access standard RAM and extended SRAM cassette
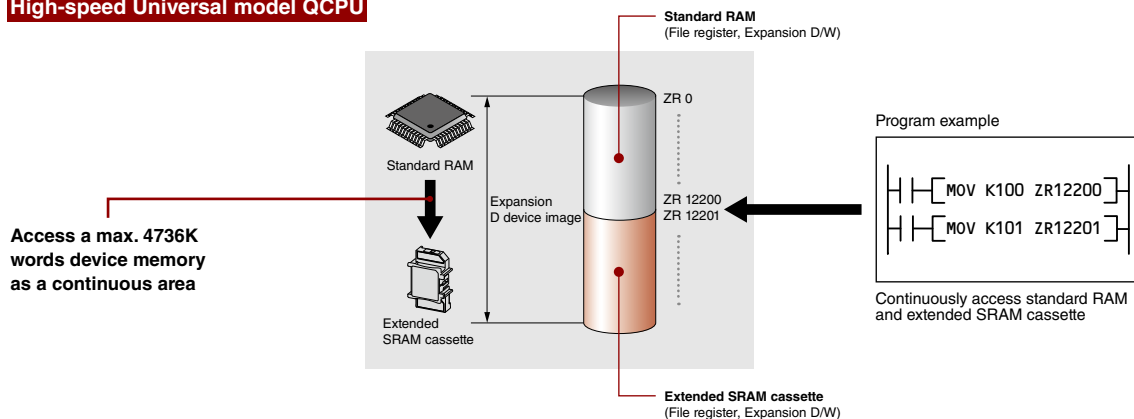
*2. Only supported by Q03UDV, Q04UDV, Q06UDV, Q13UDV, and Q26UDV.

Easy logging*3

The logging data can be saved on an SD memory card by following the setup assistant windows. The data saved in CSV format can be displayed on a computer or GOT (HMI). Various reference materials including daily and general reports can be created easily using the saved CSV file. This data can be used for a wide variety of applications requiring traceability, production data, etc.

Logging data display and analysis tool GX LogViewer

GOT (HMI) log viewer function

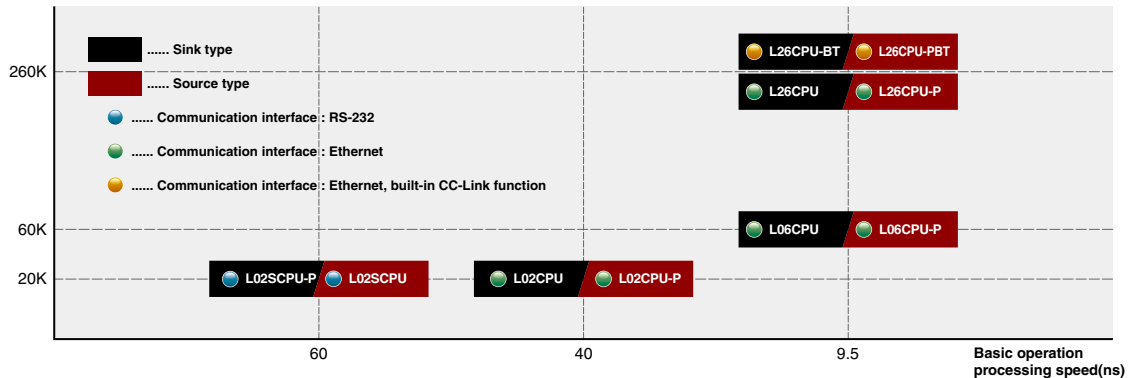*3. Supports Q03UDV, Q04UDV, Q06UDV, Q13UDV, and Q26UDV.
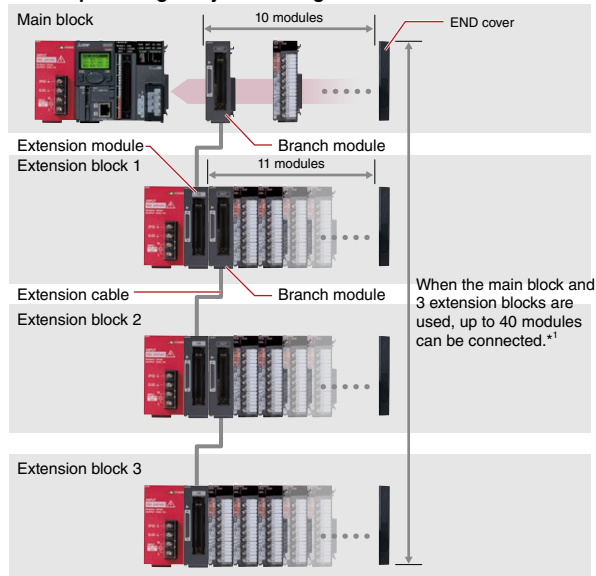
MELSEC *L series*

Convenience that fits in the palm of your hand

The L Series is a compact-class controller, part of the MELSEC products renowned for exceptional cost verses performance and strong reliability. It provides the performance, functions, and capabilities required for today's demanding applications in a small package.

Program capacity (step)

- ...... Sink type
- ...... Source type
- 🔵 ...... Communication interface : RS-232
- 🟢 ...... Communication interface : Ethernet
- 🟡 ...... Communication interface : Ethernet, built-in CC-Link function

260K	🟡 L26CPU-BT	L26CPU-PBT
	🟢 L26CPU	L26CPU-P
60K	🟢 L06CPU	L06CPU-P
20K	🔵 L02SCPU-P / L02SCPU	🟢 L02CPU / 🟡 L02CPU-P

| 60 | 40 | 9.5 | **Basic operation processing speed(ns)** |

■ Example of largest system configuration with L26CPU-BT

Main block
10 modules
END cover

Extension module — Branch module
Extension block 1
11 modules

Extension cable — Branch module
Extension block 2

When the main block and 3 extension blocks are used, up to 40 modules can be connected.*1

Extension block 3

■ CPU module

- Programmable controller CPU (sink type/source type)
  Built-in communication interface
  ▶ RS-232
  ▶ Ethernet
  ▶ Ethernet + CC-Link

■ Option

- Display unit
- RS-232 adapter
- RS-422/485 adapter
- Battery
- SD/SDHC memory card

■ Power supply modules

- Power supply module
- Power supply module (slim type)

■ Branch/extension modules

- Branch module
- Extension module

■ Modules

- I/O module
- Analog module
- Multiple input (voltage/current/temperature) module
- Temperature input module
- Temperature control module
- Simple motion module
- Positioning module
- High-speed counter module
- Flexible high-speed I/O control module
- Network module

CPU module*2	Number of extension blocks	Number of supported modules*3
L02SCPU(-P) L02CPU(-P)	Up to 2	Main block: 10 Extension block: 11
L06CPU(-P) L26CPU(-P) L26CPU-(P)BT	Up to 3	

*1. Total number of I/O, intelligent function, and network modules. Does not include branch module.
*2. CPU modules whose first five serial number digits are 13072 or later.
*3. Total number of I/O, intelligent function, network, and branch modules. Does not include power supply module, CPU module, display unit, extension module, RS-232 adapter, RS-422/485 adapter and END cover.
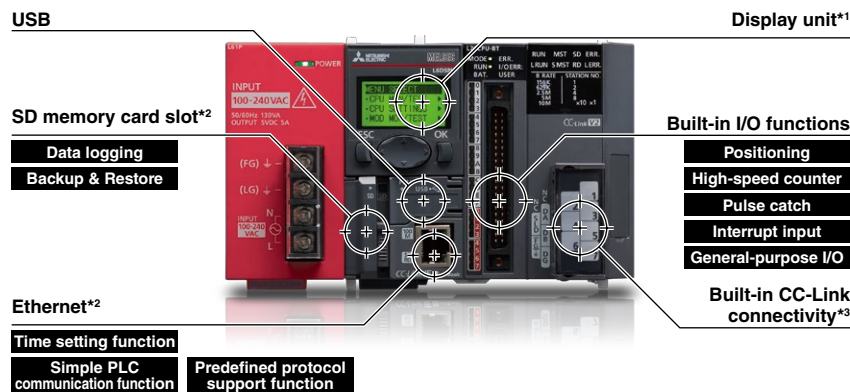
■ **Key features/functions**

Line manufacturing	Machine control	Distributed control	Small-scale I/O control	Large-scale I/O control	Space/cost saving	Security
Inter-modular sync	Built-in database	Integrated network	Multiple CPU	Process control	High-reliability control	Extensive built-in functions
C programming	Data logging	IT gateway	Motion control	Advanced motion	Safety	Real-time monitor

For further details, please refer to the catalog below.
"Programmable Controllers MELSEC-L series: L(NA)08159E"

Various built-in I/O features and communication interfaces come as standard

In its compact body, a large variety of I/O features are built in as standard. Due to an abundance of advanced functionality, L Series CPUs are flexible enough to meet a wide variety of needs. With a display unit enabling routine operation without a computer, an SD memory card, and easy-to-use programming environment, the L Series dramatically improves system designing and system operation and contributes to improve work efficiency. The display unit*1 shows system statuses and enables setting changes to be made without a program. Even when an error occurs, the error status can be easily checked, assisting troubleshooting on-site.

USB

Display unit*1

SD memory card slot*2
- Data logging
- Backup & Restore

Built-in I/O functions
- Positioning
- High-speed counter
- Pulse catch
- Interrupt input
- General-purpose I/O

Ethernet*2
- Time setting function
- Simple PLC communication function
- Predefined protocol support function

Built-in CC-Link connectivity*3

*1. Option (sold separately). Not compatible with L02SCPU (-P).
*2. Supports L02CPU (-P), L06CPU(-P), L26CPU(-P), L26CPU-(P) BT.
*3. Supports L26CPU-(P) BT.

Gain more flexibility with an integrated system bus structure

L Series modules do not require a base unit. Having an integrated system bus structure, the L Series can be attached directly to a DIN rail by using the minimal required space. Furthermore, adding modules to the system is not restricted by the number of available base unit slots, and costs may be reduced due to the elimination of extension base units.

Real-time monitor and easy logging

Device values in the CPU can be monitored in real-time with a detailed setting including interval and timing. Additionally, changes in the device value can be monitored within the GX LogViewer trend graph and are exportable to a computer for further analysis.
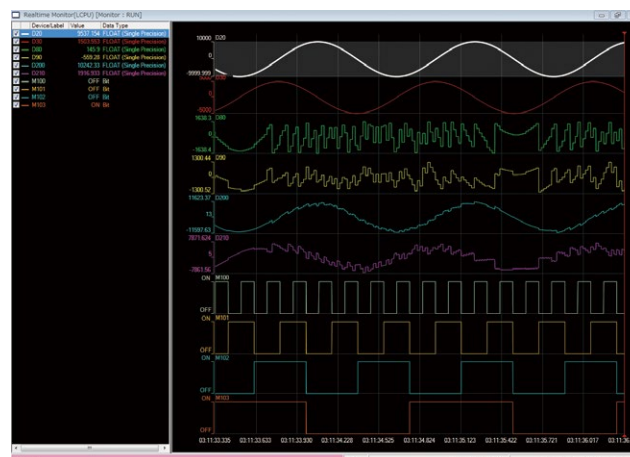
MELSEC iQ-F series

The next level of industry

iQ Platform

Designed on the concepts of outstanding performance, superior drive control and user centric programming, the MELSEC-F Series has been reborn as the MELSEC iQ-F Series. From stand-alone use to networked system applications, the MELSEC iQ-F Series brings business to the next level of industry.

Screw terminal block type

Spring clamp terminal block type

Connector type

Maximum control points	Program capacity	Pulse train	Maximum
512[*1] points	64k/128k steps	200 kpps	4 axes

Maximum control points	Program capacity	Pulse train	Maximum
512[*1] points	64k/128k steps	200 kpps	4 axes

FX5U — All-in-one model

This all-round CPU can be utilized for a wide range of applications, realizing IoT of equipment and facilities.

High-speed counter function	Positioning function
Ethernet port	RS-485 port
SD memory card slot	Analog I/O

FX5UC — Compact model

Its compact design reduces space in the control panel. Additional spring-clamp terminal blocks are newly available.

High-speed counter function	Positioning function
Ethernet port	RS-485 port
SD memory card slot	

Screw terminal block type

Maximum control points	Program capacity	Pulse train	Maximum
256 points	48k steps	200 kpps	3 axes

FX5UJ Built-in USB (Mini-B) connector

This easy to use module with various functionalities embedded achieves a cost-effective performance.

High-speed counter function	Positioning function
Ethernet port	USB (Mini-B) connector
SD memory card slot	

*1. Maximum control points including remote I/O points

■ Key features/functions

Line manufacturing	Machine control	Distributed control	Small-scale I/O control	Large-scale I/O control	Space/cost saving	Security
Inter-modular sync	Built-in database	Integrated network	Multiple CPU	Process control	High-reliability control	Extensive built-in functions
C programming	Data logging	IT gateway	Motion control	Advanced motion	Safety	Real-time monitor

Performance

Outstanding performance

- **Extensive built-in functions**
- **Debugging, extensive IoT functions**
- **Enhanced security functions**

Integration

Cooperation with driving devices

- **Easy built-in positioning**
- **Highly accurate positioning control (no special software required) by motion module and simple motion module**

Programmer's workbench

Improvement of programming environment

- **Simple point and click programming architecture**
- **Reduced development time with FB**
- **Parameterized setup for a variety of functions**

Built-in functions

Even easier to use with the effective built-in functions. Supports customers to "go one step ahead in manufacturing".

Network/communication/information-sharing

Lineup of modules compatible with various open networks, including CC-Link IE TSN and OPC UA.

Positioning control

Not only built-in positioning but full positioning is also possible by using extension modules.

Safety control

Safety extension modules are compliant with international safety standards (Category 4, PL e, and SIL 3), ensuring safety of the facility.

High-speed counter

The high-performance, high-speed counter built-in the CPU module enables high-speed I/O signal acquisition with a simple program.

Analog control

Analog control suitable for the application is possible by using expansion modules in addition to the analog input/output function of the FX5U CPU module.
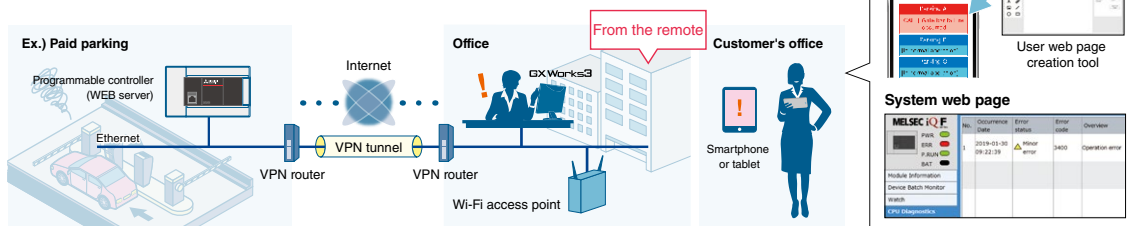
Programming environment

Graphic-based configuration realizing easier programming just by selecting parts.
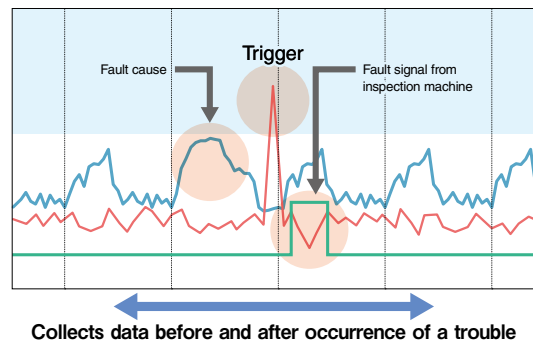
Built-in functions

Web server function

- Monitoring of equipment from remote locations
- Simple diagnostics just by accessing the programmable controller without a program
- Accessible from a smart phone and tablet
- Customized web pages can also be created with software

User's web page

User web page creation tool

System web page

Ex.) Paid parking

Programmable controller (WEB server)

Ethernet

VPN router

VPN tunnel

Internet

Office

GX Works3

From the remote

VPN router

Wi-Fi access point

Customer's office

Smartphone or tablet

Data logging function

- Collection of logged data without a program
- Output in CSV format
- Support debugging and analysis of equipment

Fault cause

Trigger

Fault signal from inspection machine

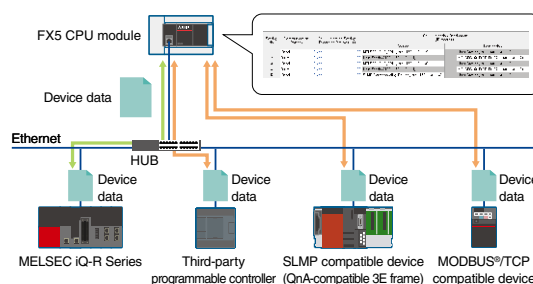**Collects data before and after occurrence of a trouble**

Memory dump function

- Batch save devices when an error occurs
- Check the saved data on the program editor
- Support debugging and analysis at an error

Check device in the event of an error on the program editor

Error

Offline monitor screen
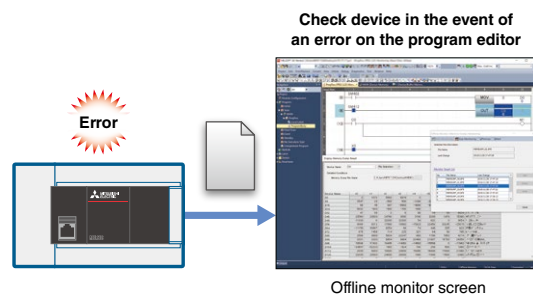
Simple CPU communication function

- Communication is possible just by registering parameters without a program
- Connectable with other third-party programmable controllers

FX5 CPU module

Device data

Ethernet

HUB

Device data

Device data

Device data

Device data

MELSEC iQ-R Series

Third-party programmable controller

SLMP compatible device (QnA-compatible 3E frame)

MODBUS®/TCP compatible device

Network/Communication/Information-sharing

CC-Link IE TSN

- Support CC-Link IE TSN master/local station
- Real-time communication with many TSN-compatible devices connected
- Combine real-time control and TCP/IP communication. Realize flexible system configuration on the same network
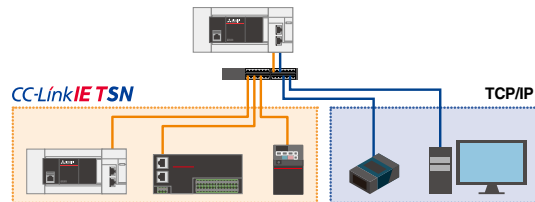

Direct access to the upper IT system

- Support OPC UA server
- Access to the upper IT system
- Low-cost system without a gateway computer
- Enhanced security with encrypted communication
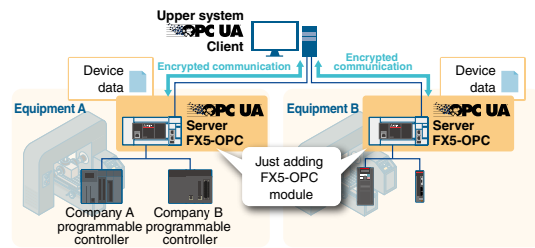
Positioning control

Built-in positioning

- Positioning of 200kpps x 4 axes maximum
- Improved usability by supporting various controls such as linear interpolation operation
- A wide range of applications can be supported by expanding positioning modules
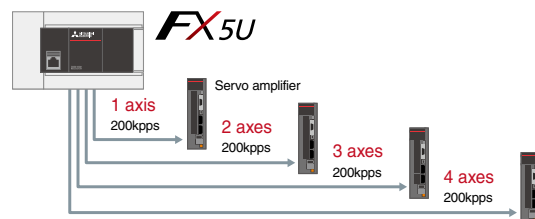
High-accuracy motion control

- High-accuracy motion control is possible by utilizing the motion module and simple motion module
- Support various operation modes such as interaxis synchronous operation and S-curve acceleration/deceleration operation
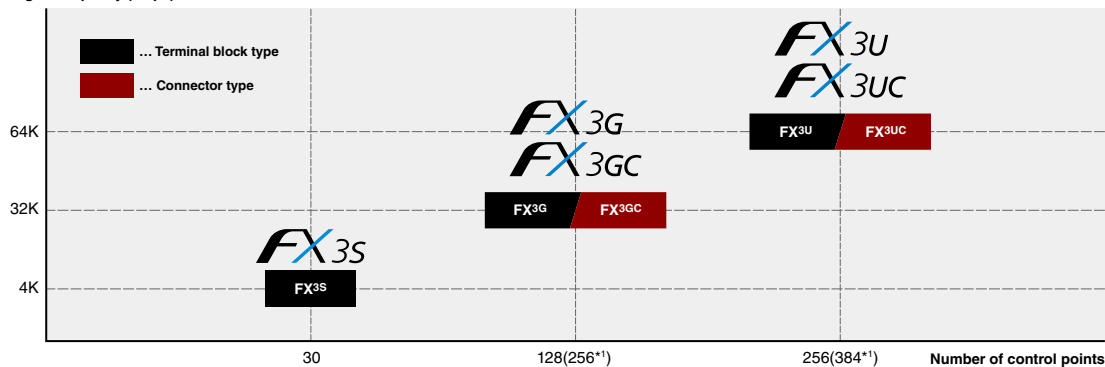- The motion module can connect CC-Link IE TSN compatible devices also

FX5-40SSC-G
FX5-80SSC-G

FX5-40SSC-S
FX5-80SSC-S

CC-Link IE TSN motion module

Simple motion module

MELSEC-F

The third generation of micro programmable controller, the FX3 Series

The FX Series is renowned for its speed, capacity, performance and extensive features. Integrated with many features including analog, communication, Ethernet, and positioning, the FX3 Series realizes high-performance in many different applications.

Program capacity (steps)

■ … Terminal block type
■ … Connector type

*FX*3U
*FX*3UC

FX3U | FX3UC

*FX*3G
*FX*3GC

FX3G | FX3GC

*FX*3S

FX3S

64K
32K
4K

30   128(256*1)   256(384*1)   **Number of control points**

*1. Number of maximum I/O points including remote I/O.

■ System configuration

Special adapter   Main unit*²   Extension unit

MITSUBISHI

Expansion boards, options

■ Main units
- FX3U/FX3UC
- FX3G/FX3GC
- FX3S

■ Special adapters
- Analog I/O
- Communication
- Data collection
- High-speed I/O

■ Expansion units
- I/O extension block
- Analog I/O block
- Temperature control block
- Temperature sensor input block
- Positioning control block
- Communication/network block
- Extension power supply unit

■ Expansion boards
- Communication
- Analog I/O
- 8-point variable analog potentiometer
- Extended I/O
- Special adapter connection

■ Options
- Display module
- Memory cassette
- Battery
- Extension cable
- Conversion adapter

*2. Connectable special adapters, extension units, expansion boards, and other options differ by the models. For details, please refer to the manual of the relevant product.

■ **Key features/functions**

Line manufacturing	Machine control	Distributed control	Small-scale I/O control	Large-scale I/O control	Space/cost saving	Security
Inter-modular sync	Built-in database	Integrated network	Multiple CPU	Process control	High-reliability control	Extensive built-in functions
C programming	Data logging	IT gateway	Motion control	Advanced motion	Safety	Real-time monitor

For further details, please refer to the catalog below.

"PROGRAMMABLE CONTROLLERS FX Family Catalog: L(NA)08490ENG"
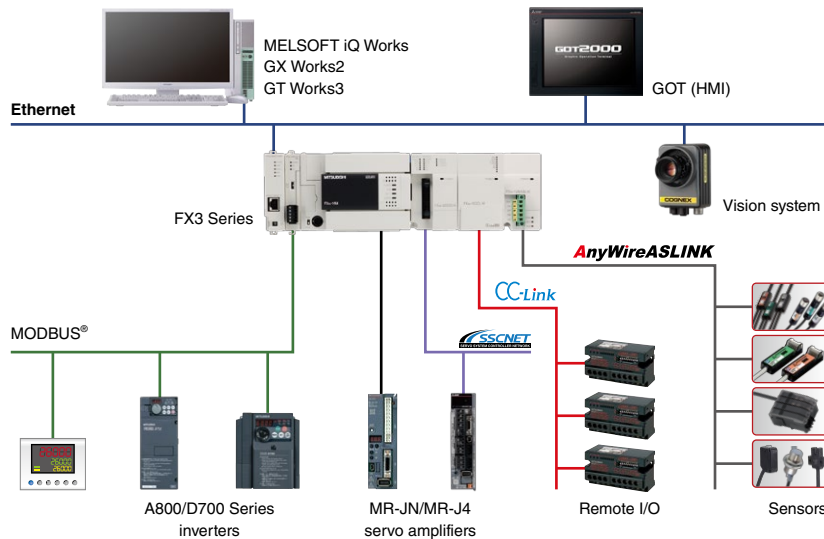
Extensive built-in functions

Including high-speed counter, positioning, high-speed I/O, communication ports, 24 V DC power supply, and other built-in functions, the main control unit can be easily connected with various different external control devices.

GOT (HMI)

Combining with other Mitsubishi Electric factory automation products

In addition to its extensive built-in functions, the FX Series is highly scalable by being connectable to various different devices such as analog, positioning, communication networks, and sensor control through its expansion unit capability.

MELSOFT iQ Works
GX Works2
GT Works3

GOT (HMI)

Ethernet

FX3 Series

Vision system

AnyWireASLINK

CC-Link

MODBUS®

SSCNET

A800/D700 Series inverters

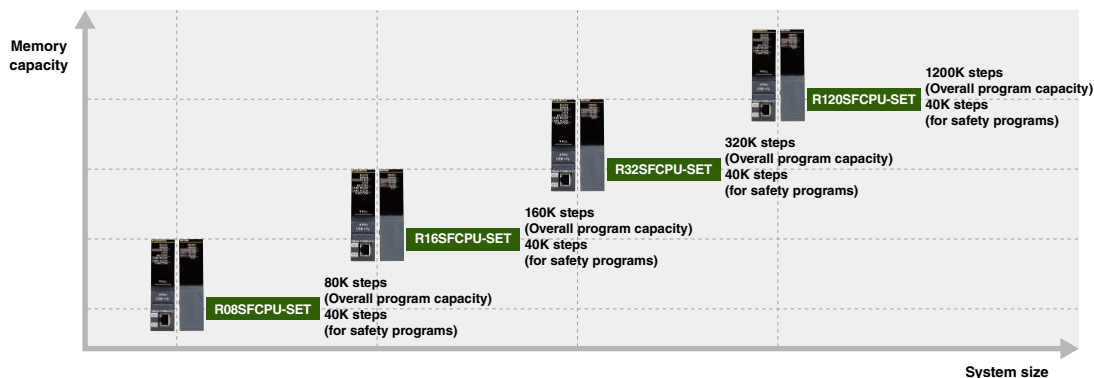MR-JN/MR-J4 servo amplifiers

Remote I/O

Sensors

MELSEC Safety iQ Platform

Safety control allows cooperative work with an operator and a machine
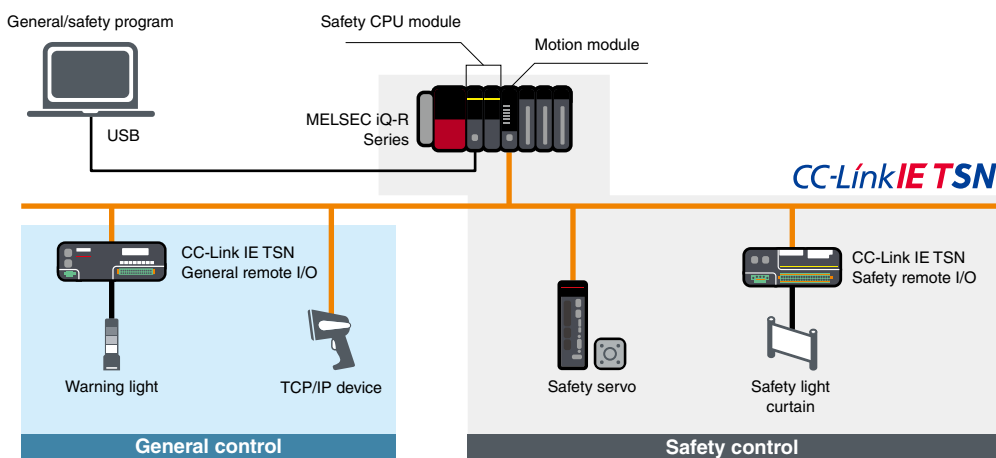
MELSEC iQ-R Series

Integrated safety control offering a total system solution

The safety CPU module compliant with the international safety standards enables control of both general and safety programs in the same module, optimizing space on the iQ-R rack. The system using the safety CPU can also reduce wiring since safety switches and safety light curtains can be connected via the CC-Link IE TSN which integrates both general and safety communications. The entire system can be programmed using GX Works3 programming software as standard.

Memory capacity / System size

R08SFCPU-SET — 80K steps (Overall program capacity) 40K steps (for safety programs)

R16SFCPU-SET — 160K steps (Overall program capacity) 40K steps (for safety programs)

R32SFCPU-SET — 320K steps (Overall program capacity) 40K steps (for safety programs)

R120SFCPU-SET — 1200K steps (Overall program capacity) 40K steps (for safety programs)

Safety communication on the same network

Establishing a safety communication is as easy as configuring a CC-Link IE TSN. The physical layer and data communications is based on Ethernet technology and enables commercial cables, adapters, and hubs to be used. The safety communication also takes advantage of highly flexible features offered by CC-Link IE TSN.

CC-Link IE TSN

General control: Warning light, TCP/IP device — CC-Link IE TSN General remote I/O

Safety control: Safety servo, Safety light curtain — CC-Link IE TSN Safety remote I/O

For further details, please refer to the catalog and broadcast below.
"MELSEC PROCESS CONTROL/REDUNDANT SYSTEM: L(NA)08030E"
"MELSEC iQ-R Series Broadcast Process CPU/ Redundant System/SIL2 Redundant System: R007ENG"

MELSEC PROCESS CONTROL iQ Platform

High-speed processing for full-scale monitoring and control

| MELSEC iQ-R Series | MELSEC-Q Series |

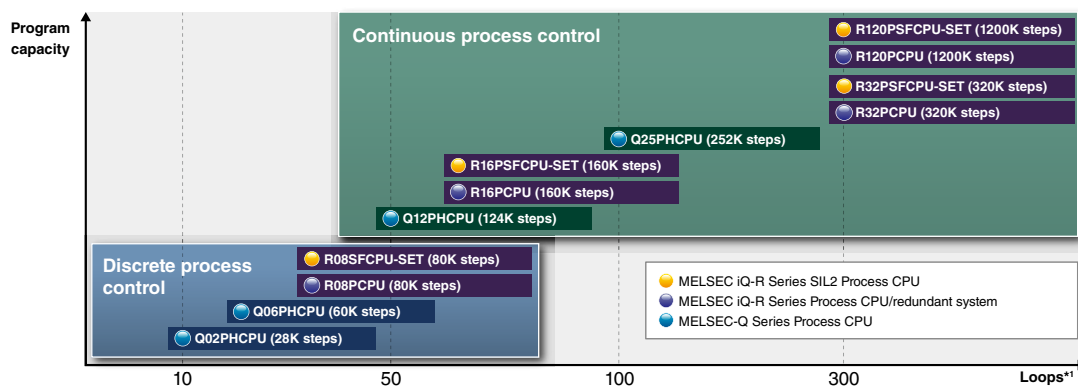## Flexible process control in a cost-efficient automation control solution

The MELSEC process control system consists of a number of specialized controllers specifically designed for use in process automation. The CPUs are highly flexible utilizing standard automation control system features rather than highly-specialized distributed control system (DCS) solutions that can be costly to replace and maintain. The system is available in two types, general and high-reliability.

Discrete process control — Food processing equipment, semiconductor systems, air-conditioning equipment, industrial furnaces, etc.
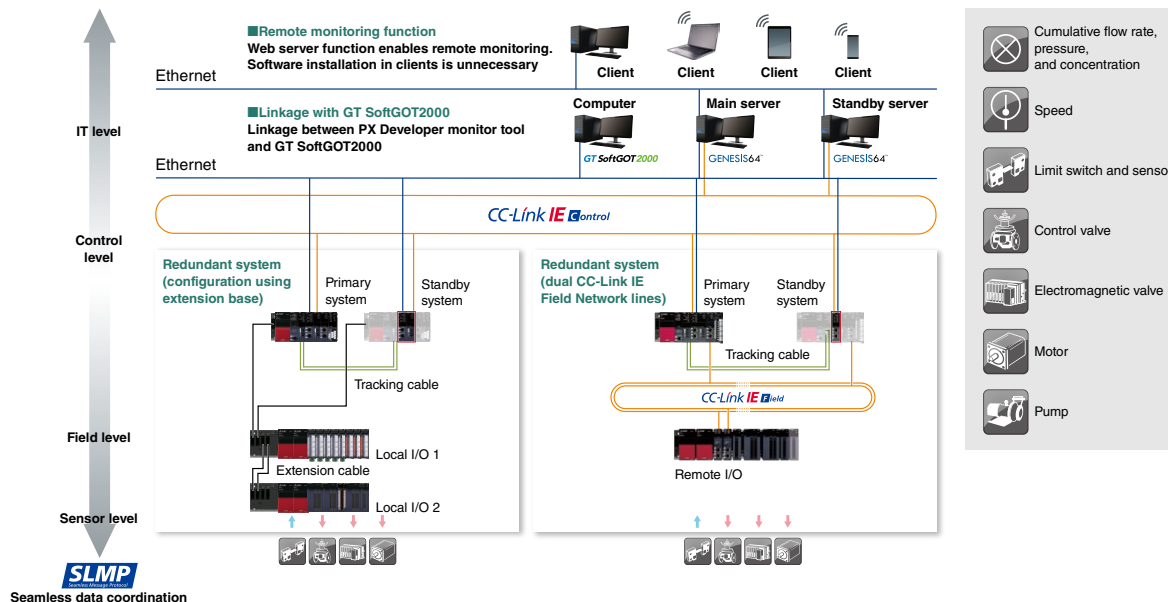
Continuous process control — Chemical, steel, environmental and water treatment plants, DCS replacement, etc.

Program capacity

Continuous process control
- R120PSFCPU-SET (1200K steps)
- R120PCPU (1200K steps)
- R32PSFCPU-SET (320K steps)
- R32PCPU (320K steps)
- Q25PHCPU (252K steps)
- R16PSFCPU-SET (160K steps)
- R16PCPU (160K steps)
- Q12PHCPU (124K steps)

Discrete process control
- R08SFCPU-SET (80K steps)
- R08PCPU (80K steps)
- Q06PHCPU (60K steps)
- Q02PHCPU (28K steps)

- ● MELSEC iQ-R Series SIL2 Process CPU
- ● MELSEC iQ-R Series Process CPU/redundant system
- ● MELSEC-Q Series Process CPU

10   50   100   300   Loops[1]

*1. The maximum amount of usable loops may change depending on the actual program size used. Please refer to the relevant manuals for further details.

The MELSEC iQ-R Series process CPU includes dedicated algorithms (such as two-degree-of-freedom PID, sample PI, and auto-tuning), and supports memory sizes of up to 1200K steps. In addition, when paired with a redundant function module, a highly reliable (redundant) control system can be realized. The SIL2 process CPU[2] also realizes a redundant system conforming to IEC 61508 SIL 2 safety standard.

*2. Only supports redundant control system.

Remote monitoring function
Web server function enables remote monitoring. Software installation in clients is unnecessary

Ethernet — Client Client Client Client

IT level

Linkage with GT SoftGOT2000
Linkage between PX Developer monitor tool and GT SoftGOT2000

Computer — Main server — Standby server
GT SoftGOT2000   GENESIS64   GENESIS64

Ethernet

Control level

CC-Link IE Control

Redundant system (configuration using extension base) — Primary system / Standby system

Redundant system (dual CC-Link IE Field Network lines) — Primary system / Standby system

Tracking cable

Field level

CC-Link IE Field

Local I/O 1

Extension cable

Local I/O 2

Remote I/O

Sensor level

SLMP
Seamless data coordination

Cumulative flow rate, pressure, and concentration
Speed
Limit switch and sensor
Control valve
Electromagnetic valve
Motor
Pump

C Controller iQ Platform

Open platform utilizing edge computing for optimizing productivity

MELSEC iQ-R
Series

Robust and deterministic alternative to microcomputer/computer based systems

The MELSEC C Controller product range is capable of programming using C language and offers a realistic alternative to mainstream microcomputer/computer based systems. Being part of the MELSEC Series, the C Controller utilizes its robust industrial design and long product life cycle, offering an easy way to realize a cost-efficient solution together with supporting partner products, open source and custom-made applications. This lineup is further enhanced with the new MELSEC iQ-R Series multi-core Arm®-based C Controller with VxWorks® 6.9 pre-installed.

Easier to configure various control systems

Highly customizable solution enables the integration of partner products, open source applications, and OS-independent capabilities onto a generic open platform.

Third-party partner applications

Access to modules using dedicated functions
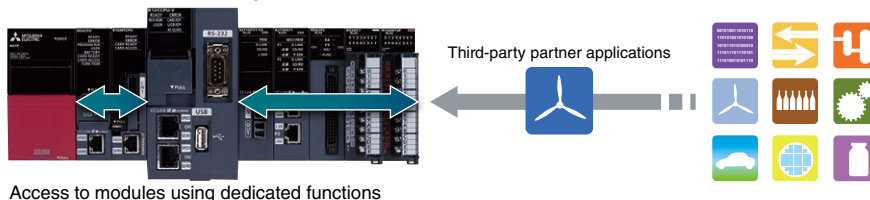
Reduce common overhead expenses realizing a cost effective solution

The C Controller platform is a solution that realizes computer-level functionality without the burden of high maintenance costs usually associated with computers. In addition, by being based on the MELSEC control system, the C Controller has a robust design that is ideal for industrial environments.

Common drawbacks associated with embedded and industrial computers
● Discontinued production of boards & chips
● Specialized, costly driver development
● Short product life cycle
● Large physical space required
● Frequent maintenance required

Old Platform
(Microcomputer/
computer)
• Disrupted product supply due to discontinued production
• Escalating management and maintenance costs

Merits of using MELSEC hardware
● Highly reliable, long-term stable supply
● Utilization of C language programs
● Significantly reduced maintenance costs
● Reduced equipment size
● Total solution provided by a large number of I/Os and seamless network access

New Platform
(MELSEC-Q/
MELSEC iQ-R)
• Stable product supply
• Lower maintenance and management costs allows resources to be focused on development

MELSECWinCPU iQ Platform

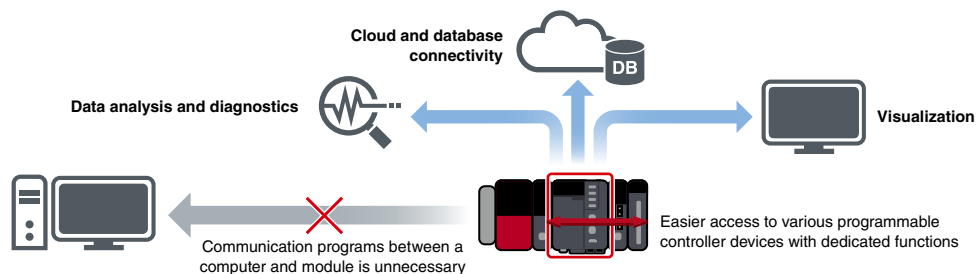## Integrated control and information processing utilizing Windows® on the base unit

MELSEC iQ-R Series

Information processing utilizing Windows®

Utilizing the familiar Windows® in the office, information processing such as control data calculation/ processing and data exchange with a computer are possible. The MELSECWinCPU module, which is incorporated into the multiple CPU configuration, can easily add functions utilizing Windows® to the existing equipment. Easy-to-understand development environment such as Microsoft® Visual Basic® and Visual C#® as well as existing development assets can be utilized.

IT system is easily configured utilizing pre-installed functions

The IT system on the production site can be configured using Microsoft® Visual Studio® development environment. The MELSECWinCPU module can easily communicate with the programmable controller system by using pre-installed functions (C Controller module dedicated functions and MELSEC communication functions). A computer is no longer necessary in the production site, therefore eliminating any issues of LAN installation.

Cloud and database connectivity

Data analysis and diagnostics

Visualization

Communication programs between a computer and module is unnecessary

Easier access to various programmable controller devices with dedicated functions

On-site development reduces risk of data breach

Due to growing security concern, it is becoming increasingly difficult to bring computers to the production site. The MELSECWinCPU module is an excellent alternative to a computer. Installing the MELSECWinCPU module in the control panel can reduce the risk of technology and data theft as well as virus invasion. When the engineering software is installed and a keyboard, mouse and display are connected, urgent maintenance is easily handled.

Install

MELSOFT

A computer is unnecessary
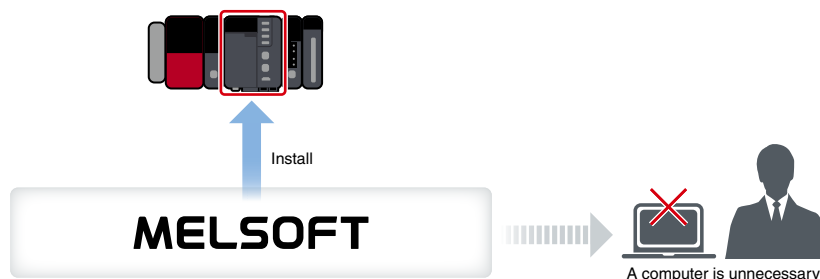
SERVO SYSTEM CONTROLLER iQ Platform

Total system performance leads to maximum performance

| MELSEC iQ-R Series | MELSEC-Q Series | MELSEC-L Series | MELSEC iQ-F Series |

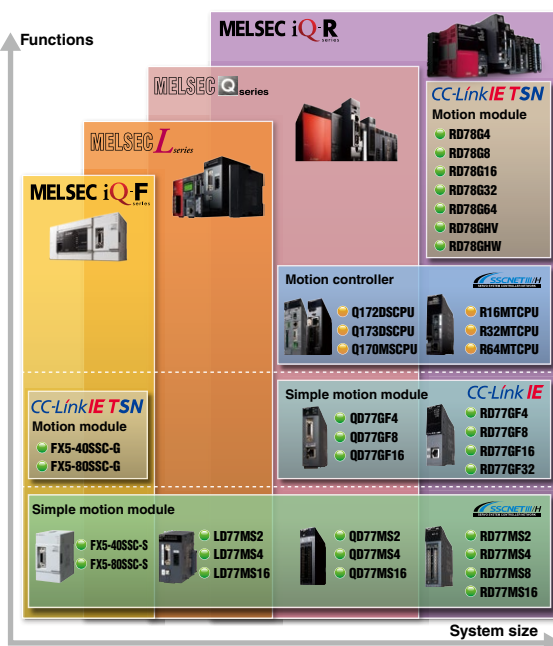## Lineup capable of responding to versatile sizes and applications

A full lineup of servo system controllers supports all types of system configurations. The lineups include motion modules ideal for high-speed/multi-axis systems, simple motion modules for simple positioning control, and motion CPUs incorporated into the multi-CPU architecture allowing control load to be separated.

● Motion module

| MELSEC iQ-R Series | MELSEC iQ-F Series |

Highly functional motion modules are fully capable of performing in any motion control applications.

- Achieve higher performance in the existing system
- Implement a high-performance system in preparation for future expansion
- Improve usability of control as well as maintenance
- Configure the safety system with networks

The variety of products can respond to these requirements.

Functions

MELSEC iQ-R series

MELSEC Q series

MELSEC L series

MELSEC iQ-F series

CC-Link IE TSN
Motion module
- RD78G4
- RD78G8
- RD78G16
- RD78G32
- RD78G64
- RD78GHV
- RD78GHW

Motion controller
- Q172DSCPU
- Q173DSCPU
- Q170MSCPU

SSCNETIII/H
- R16MTCPU
- R32MTCPU
- R64MTCPU

CC-Link IE TSN
Motion module
- FX5-40SSC-G
- FX5-80SSC-G

Simple motion module
- QD77GF4
- QD77GF8
- QD77GF16

CC-Link IE
- RD77GF4
- RD77GF8
- RD77GF16
- RD77GF32

Simple motion module
- FX5-40SSC-S
- FX5-80SSC-S

- LD77MS2
- LD77MS4
- LD77MS16

- QD77MS2
- QD77MS4
- QD77MS16

SSCNETIII/H
- RD77MS2
- RD77MS4
- RD77MS8
- RD77MS16

System size

▶ Two modes are available

The simple motion mode enables utilization of existing program assets of the Simple Motion module. While the PLCopen® motion control FB mode supports FB library, making programming even easier with its intuitive features.

Simple motion mode   **Simple Motion**

A motion profile table positioning control and advanced synchronous control by synchronized parameter setting are possible. Motion control is possible by control programs only.

- Motion profile table
- Advanced synchronous control
- Digital oscilloscope

PLCopen® motion control FB mode   **PLCopen®**

Utilizes the library of PLCopen® Motion Control FBs, which is compliant with international standards, for programming. The motion module executes motion control with various advanced technologies such as programming using ST language and logging of motion control data.

- ST language
- PLCopen® Motion Control FB
- Logging

▶ CC-Link IE TSN-compatible servo amplifier

Use the motion module in combination with the CC-Link IE TSN-compatible servo amplifier MELSERVO-J5. Wiring the Ethernet-based CC-Link IE TSN is easily done using a LAN cable. High-accuracy synchronous control of multi-axis system with less delay is achieved.

MITSUBISHI ELECTRIC SERVO SYSTEM
MELSERVO-J5

● Simple motion module

| MELSEC iQ-R Series	MELSEC-Q Series	MELSEC-L Series	MELSEC iQ-F Series

The modules enable simple positioning effectively by setting control programs and advanced synchronous control such as cam control, achieving advanced and wide-ranging motion control.

● Motion controller

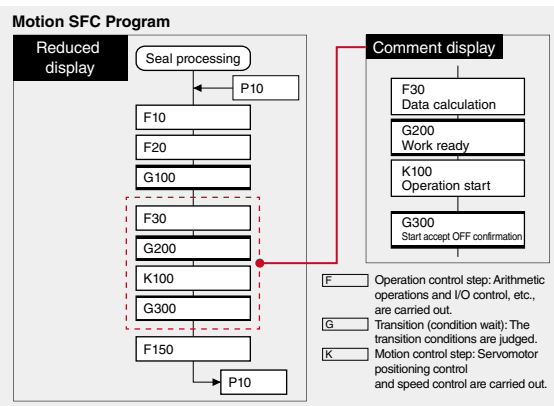| MELSEC iQ-R Series	MELSEC-Q Series

- Increase productivity by supporting the iQ Platform
- Advanced synchronous control and cam control
- High-speed and high-accuracy positioning by directly connecting with the vision system

In production lines responding to high variety and variable quantity production, recipe data needs to be instantly reflected to the motor operation according to commands from the computer. In the multi-CPU configuration of controller CPU and motion CPU, recipe data and production results data constantly changing can be handled via a large memory area shared.
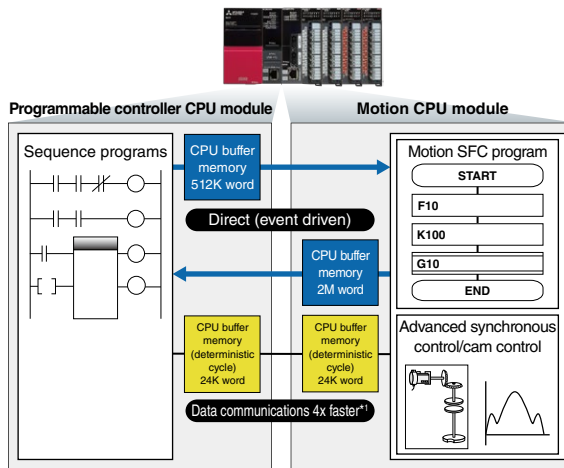
*1. Four times faster compared to existing models.

The SFC (Sequential Function Chart) type language which enables programming in clearly identifiable steps is ideal for complex motion control of increased number of axes. This is extremely useful where faster machine response with excellent event processing capability is required.

Programmable controller CPU module | **Motion CPU module**

Sequence programs — CPU buffer memory 512K word → Motion SFC program (START, F10, K100, G10, END)

Direct (event driven)

CPU buffer memory 2M word

CPU buffer memory (deterministic cycle) 24K word | CPU buffer memory (deterministic cycle) 24K word — Advanced synchronous control/cam control

Data communications 4x faster*1

Motion SFC Program

Reduced display | Seal processing → P10
F10
F20
G100
F30
G200
K100
G300
F150 → P10

Comment display
F30 Data calculation
G200 Work ready
K100 Operation start
G300 Start accept OFF confirmation

F — Operation control step: Arithmetic operations and I/O control, etc., are carried out.
G — Transition (condition wait): The transition conditions are judged.
K — Motion control step: Servomotor positioning control and speed control are carried out.

▶ Extensive motion control

Positioning, speed-torque (press-fit) and advanced synchronous control among other forms of motion control for various equipment, including X-Y table, packaging and press-fitting machines. Ideal features designed to provide optimal solutions for machines and applications.

Control

Versatile motion control support different machines.
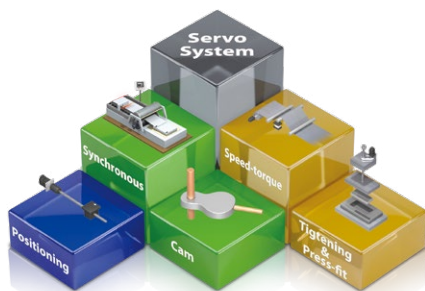
Functions*2

Select the functions best suited to match equipment.

Cam auto-generation	Mark detection function	Optional data monitor	Absolute position system
Unlimited length feed	Target position change function	Safety observation function	M-code output
Digital oscilloscope function	Driver communi-cation	Vision system	

*2. Availability of functions and function names differ according to models.

▶ SSCNETⅢ/H compatible servo amplifier

The simple motion module and motion controller can achieve high-accuracy positioning and smooth operation in combination with the SSCNETⅢ/H-compatible MELSERVO-J5/MELSERVO-J4 Series servo amplifiers.
SSCNETⅢ/H is a high-speed synchronous network over a fiber-optic cable with dramatically improved noise immunity.

For further details, please refer to the catalog below.

"MITSUBISHI ELECTRIC INDUSTRIAL ROBOT
FR Series: L(NA)-09091ENG"

ROBOT CONTROLLER iQ Platform

Simplified start-up and improved productivity and maintenance, maximizing the potential of the FR Series

MELSEC iQ-R Series

MELFA FR Series

"Next-generation intelligent functions" make it simple to carry out work that has always defied automation. "Safe, collaborative work applications" allow robots and people to work together with high levels of safety. "FA-IT integration functions" support next-generation manufacturing. With these 3 key features, the FR Series is capable of handling virtually all your automation needs.

Intelligence
[Next-generation intelligence]

Integration
[FA-IT integration]

Safety
[Safe, collaborative work applications]

Greater advances in intelligent technology

"MELFA Smart Plus" offers greater accuracy and shorter startup times, making installation simpler and more advanced tasks possible through more sophisticated force sensors and enhanced cooperation with vision sensors.

Enhanced cooperation through e-F@ctory

Connection and integration with a wide range of FA equipment, such as the MELSEC iQ-R Series. These machines support the "e-F@ctory" integrated FA solution for seamless integration of robots and IT systems.

Improved safety through collaborative work applications

A comprehensive range of safety functions, including position and speed monitoring and monitoring of the X, Y and Z components, allow work to be conducted in collaboration with people.

Making difficult automation possible

Intelligent technology means that it is now possible to automate processes that previously could only be handled by humans due to the difficulty of the tasks involved. And using "Smart Plus", this can be achieved with ease.

Promoting smarter factories

The integration of e-F@ctory machines enables flexible manufacturing tailored to the type of production. This improves productivity and maintainability and reduces the TCO (Total Cost of Ownership).

Even higher productivity

Safety functions make collaborative work applications possible, for automation that is simpler and safer. The reductions in required space and stoppage times mean that factories can offer both productivity and flexibility.
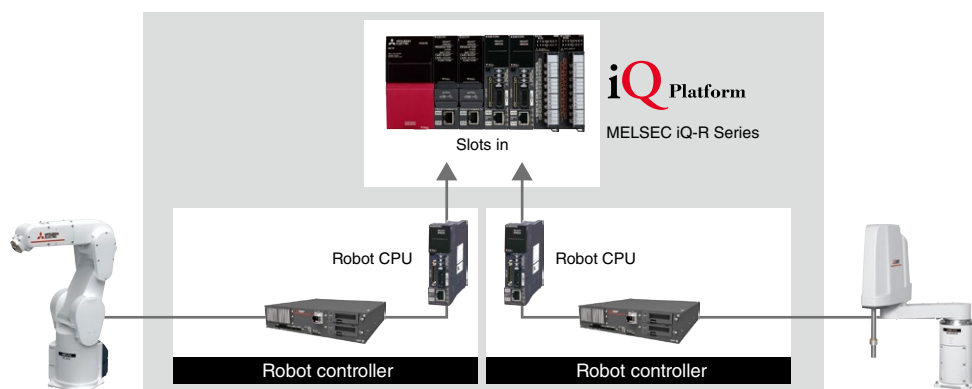
iQ Platform

MELSEC iQ-R Series

Slots in

Robot CPU

Robot CPU

Robot controller

Robot controller
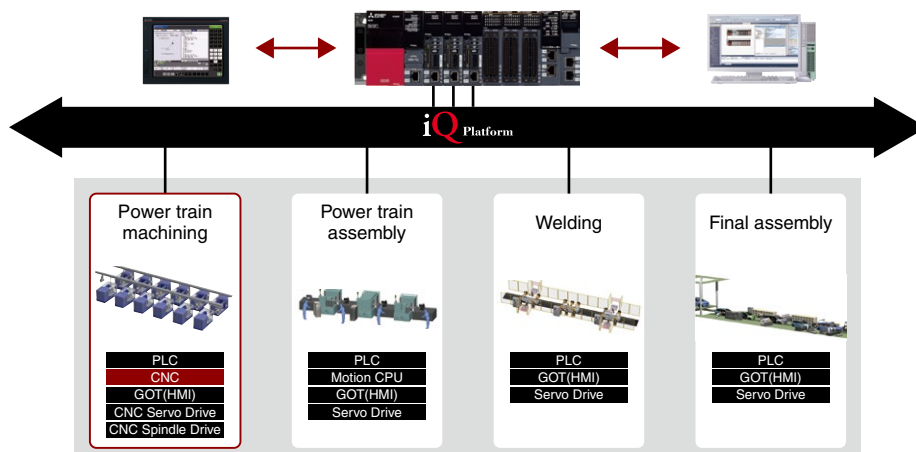
CNC CPU iQ Platform

Providing maximum reduction in TCO

MELSEC iQ-R Series

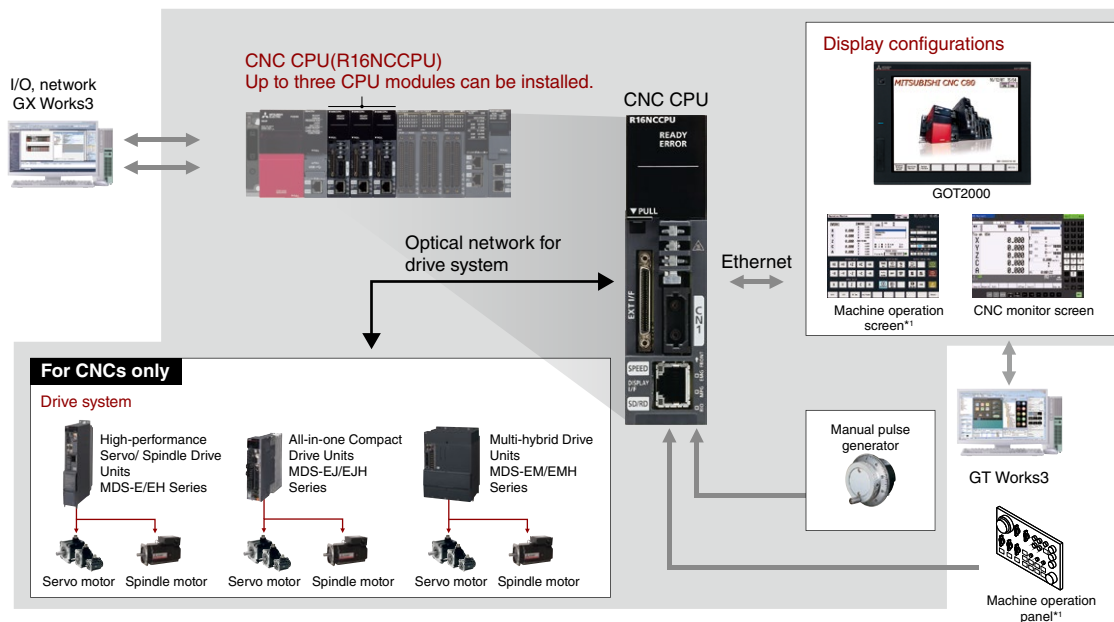## Integrating high-performance CNCs and high-speed programmable controllers

Integrate high-performance CNCs with the iQ Platform and experience substantially enhanced overall control system operation time, improving performance and enhancing productivity. Using standard modules contributes to reducing maintenance costs even further as replacements are generally available.

iQ Platform makes it possible to optimize controller use for various lines.

iQ Platform

Power train machining	Power train assembly	Welding	Final assembly
PLC	PLC	PLC	PLC
CNC	Motion CPU	GOT(HMI)	GOT(HMI)
GOT(HMI)	GOT(HMI)	Servo Drive	Servo Drive
CNC Servo Drive	Servo Drive		
CNC Spindle Drive			

High-speed communication between CNCs and programmable controllers

High-speed CPU processing supported by fast communication bus speeds enable high-speed communication between controllers.

I/O, network
GX Works3

CNC CPU(R16NCCPU)
Up to three CPU modules can be installed.

CNC CPU

R16NCCPU
READY
ERROR
▼PULL

Display configurations

MITSUBISHI CNC C80

GOT2000

Machine operation screen[1]   CNC monitor screen

Optical network for drive system

Ethernet

For CNCs only

Drive system

High-performance Servo/ Spindle Drive Units
MDS-E/EH Series

All-in-one Compact Drive Units
MDS-EJ/EJH Series

Multi-hybrid Drive Units
MDS-EM/EMH Series

Servo motor   Spindle motor   Servo motor   Spindle motor   Servo motor   Spindle motor

Manual pulse generator

GT Works3

Machine operation panel[1]

*1. Made by the machine tool builder

Programmable controller engineering software

MELSOFT iQ Works

MELSOFT iQ Works is an integrated software suite consisting of GX Works3, MT Works2, GT Works3, RT ToolBox3 and FR Configurator2, which are programming software for each respective product. Integration is further enhanced with MELSOFT Navigator as the central system configuration incorporating an easy-to-use, graphical user interface with additional project-sharing features such as system labels and parameters. The advantages of this powerful integrated software suite are that system design is made much easier with a substantial reduction in repetitious tasks, cutting down on errors while helping to reduce the overall TCO.
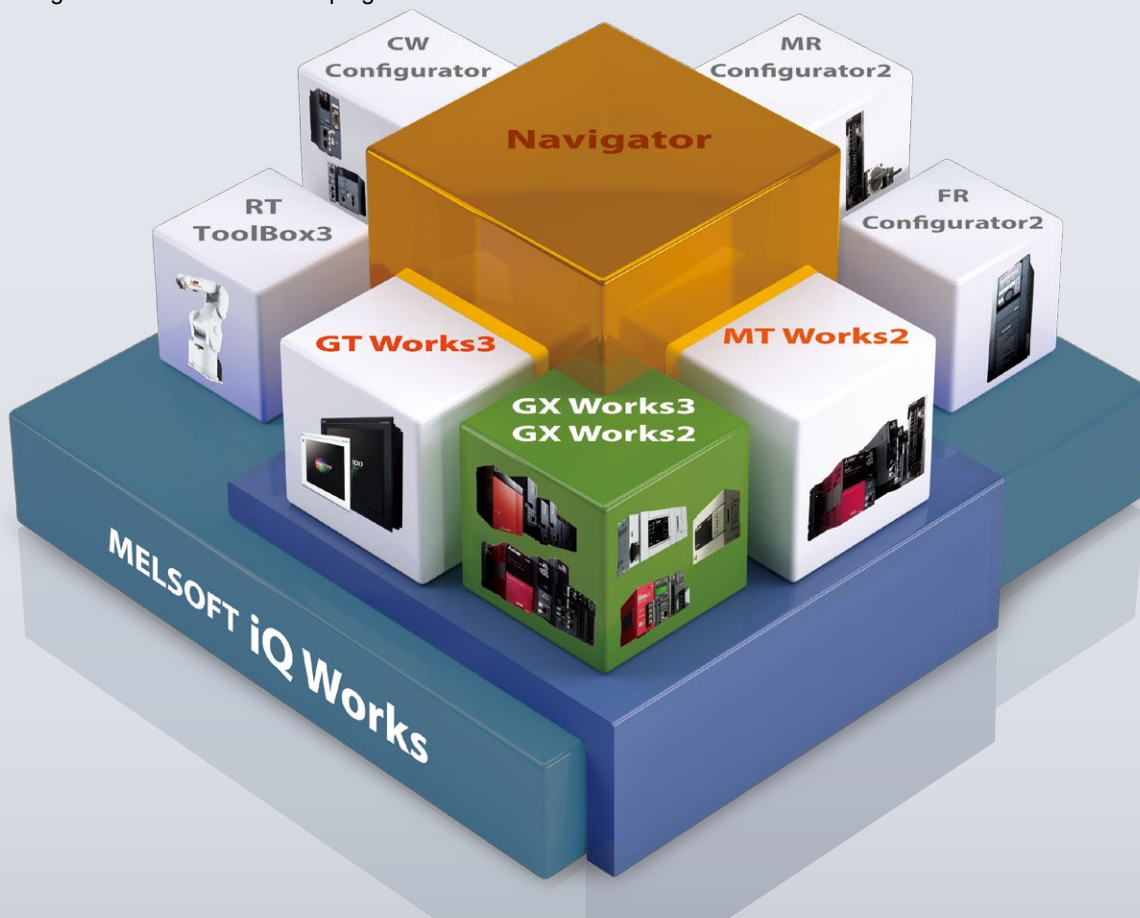
Programmable controller engineering software

MELSOFT GX Works3

Latest generation of software available for the MELSEC iQ-R and iQ-F Series control systems. Includes a graphic-based system configuration, integrated motion control setup, multiple language support, in addition to extensive diagnostics and troubleshooting functions.

MELSOFT GX Works2

Incorporating backward compatibility of programs created with GX Developer, GX Works2 further improves its functionality resulting in reduced engineering costs.
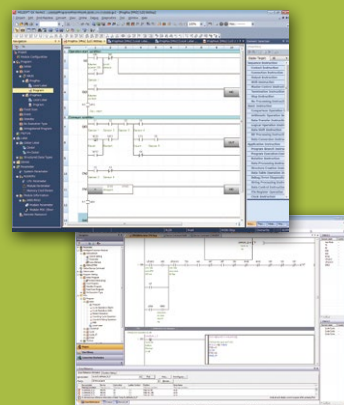
For further details, please refer to the catalog below.

"Mitsubishi iQ Platform Compatible FA Integrated Engineering Software MELSOFT iQ Works:L(NA)08232ENG"

System management software

MELSOFT Navigator

System level graphic-based configuration tool that simplifies the system design by providing a visual representation of the system.
System management features such as system-wide parameterization, labels and block reading of project data are also included.
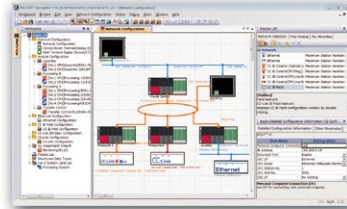
HMI/GOT screen design software

MELSOFT GT Works3

The GOT (Graphic Operation Terminal) screen creation software is designed with three main features;
Simplicity, Graphics Design, and Easy-Usability, further helping to create graphic screens in fewer steps.

Motion controller engineering software

MELSOFT MT Works2

This motion control design and maintenance software includes intuitive graphic-based programming together with a digital oscilloscope simulator, helping to reduce the motion system TCO.

Robot engineering software

MELSOFT RT ToolBox3*1

Supports various steps from programming, to commissioning, evaluation, and maintenance. In addition, improved preventative maintenance is realized through the use of an integrated 3D robot simulator.

*1. RT ToolBox3 mini (simplified version) will be installed if iQ Works product ID is used.
When RT ToolBox3 (with simulation function) is required, please purchase RT ToolBox3 product ID.
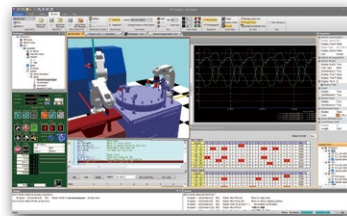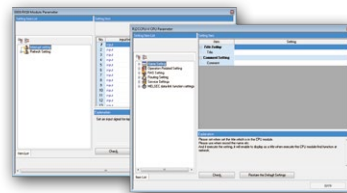
Inverter setup software

MELSOFT FR Configurator2

Simplifies the setup and maintenance of AC inverters. Parameters can be registered easily and distributed to multiple inverters when replacing, and activation of the PLC function all from one setup screen.
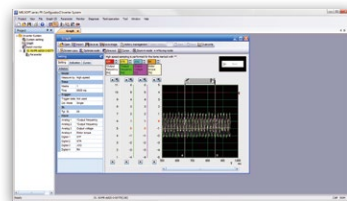
C Controller setting and monitoring tool

MELSOFT CW Configurator

This C Controller parameter setting and monitoring software simplifies parameter setting, diagnostics, monitoring and testing. Using CW Configurator is as easy as using the MELSEC iQ-R engineering software GX Works3, which shares similar interfaces.

Servo setup software

MELSOFT MR Configurator2

Servo setup software used for easy monitoring, diagnostics, registering parameters, and testing of the servo amplifier.
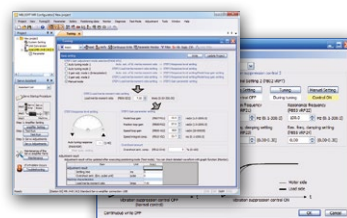
Programmable controller engineering software

GX Works3

Reducing development costs through intuitive engineering

The engineering software is sometimes considered a fundamental part of the control system in addition to the hardware components. The core of the system, it includes various steps of the product life cycle, from the design stage all the way to commissioning and maintenance of the control system. Today, intuitive, easy-to-use software suites are expected as a standard for modern manufacturing needs. GX Works3 is the latest generation of programming and maintenance software offered by Mitsubishi Electric specifically designed for the MELSEC iQ-R and MELSEC iQ-F Series control system. It includes many new features and technologies to ensure a trouble-free engineering environment solution.

Intuitive engineering software covering the product development cycle

Graphic-based configuration realizing easier programming

Various intuitive features such as graphic-based system configuration and an extensive module library (module label/FB) provided as standard.

Integrated motion-control system configuration

From setting simple motion module parameters and positioning data setup to servo amplifier configuration, everything is packaged into an easy-to-use engineering environment.

Complies with IEC 61131-3

GX Works3 realizes structured programming such as ladder and ST, making project standardization across multiple users even easier.

Simple point and click programming architecture

System design \ Programming \ Debug/maintenance

Straightforward graphic based system configuration design

- Simply drag and drop from the module list to easily create system configuration
- Directly setup parameters for each module
- Automatically reflect changes in the layout to the module parameters

System design \ **Programming** \ Debug/maintenance

MELSOFT library enables efficient programming through "Module Label/FB"

- Assign convenient label names to internal devices, rather than manually entering a device name every time
- Simply drag & drop module FBs from the MELSOFT Library directly into the ladder program, making programming even easier

System design \ Programming \ **Debug/maintenance**

Extensive version control features

- Flexibly register program change (historical) save points
- Easily visualize and confirm program changes

Global realization by multi-language support

To adhere to today's global production needs, GX Works3 supports multi-language features at various levels, from the multiple language software menu to the device comment language switching feature.
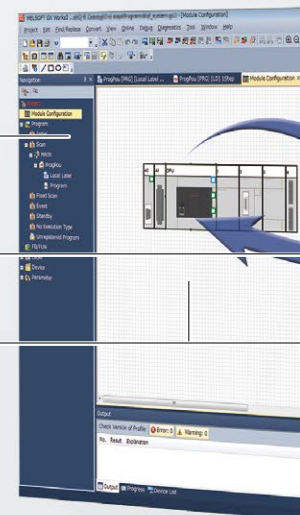
Navigation window
Easily access project components
Organize program file list.

Module configuration
Easily parameterize each module directly from the configuration editor.

Module list
Simply drag & drop modules directly into the module configuration.

GX Works3

One Software, Many Possibilities

Reduce engineering time by 60%*[1]
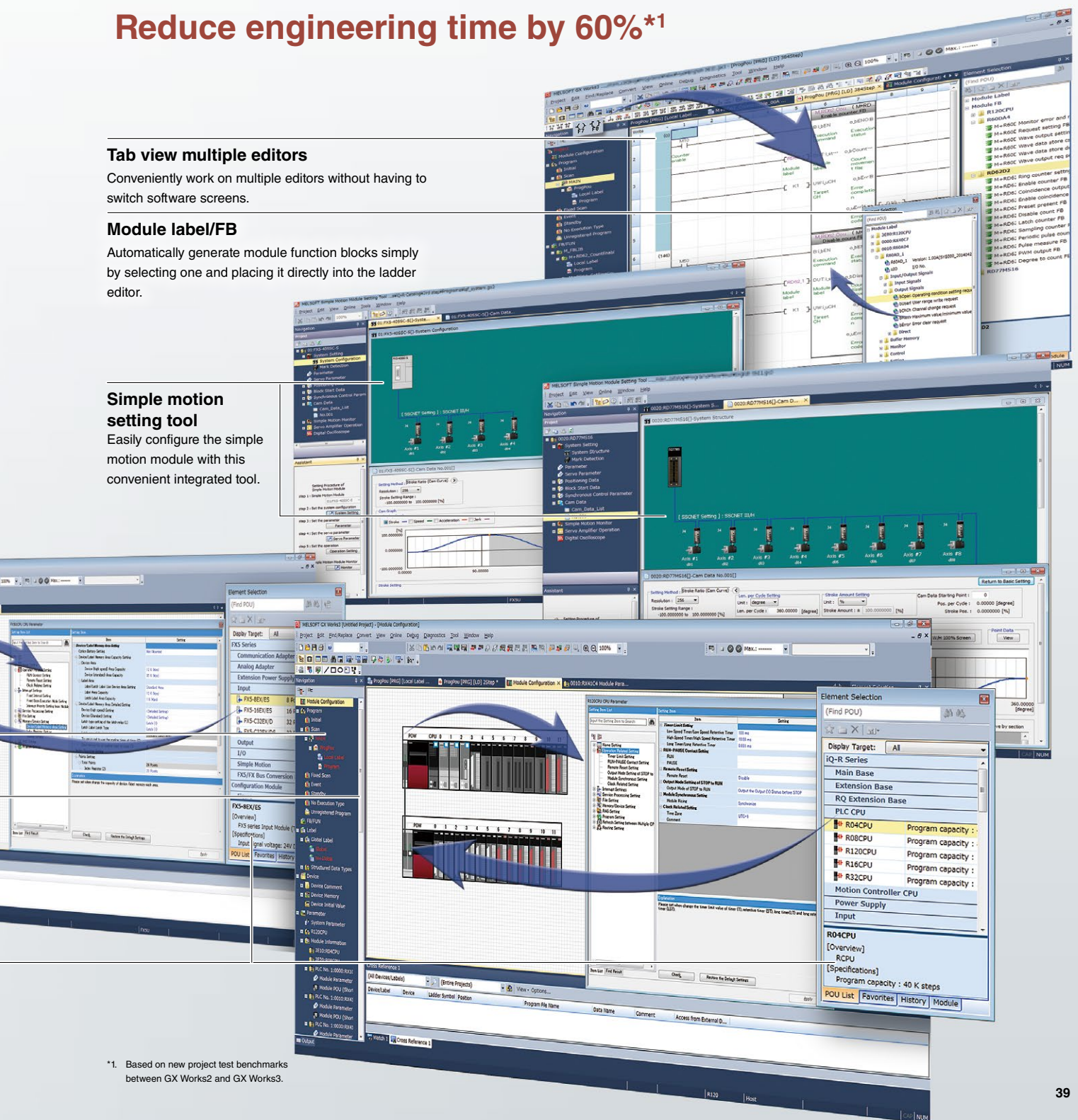
Tab view multiple editors
Conveniently work on multiple editors without having to switch software screens.

Module label/FB
Automatically generate module function blocks simply by selecting one and placing it directly into the ladder editor.

Simple motion setting tool
Easily configure the simple motion module with this convenient integrated tool.

*1. Based on new project test benchmarks between GX Works2 and GX Works3.

Programmable controller engineering software

GX Works2

Sample comments are available to quickly input comments

A comment for a word device can be set at bit level, differentiating similar devices

In-line ST for directly inserting operation instructions into the ladder

Easily setup intelligent function modules

Title display enables program contents to be checked at a glance

Project tree view showing the engineering process

Easily switch connection targets within the same window
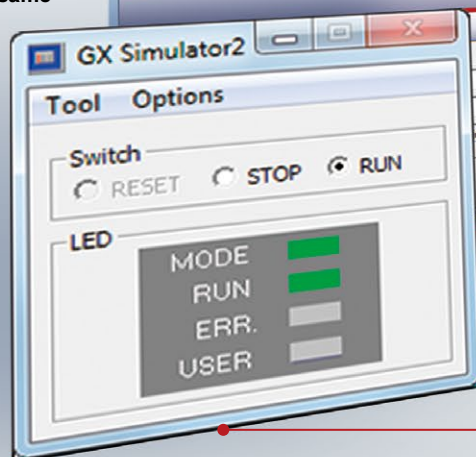
Offline debugging with hardware emulation

Intuitive cross-reference list displays devices used in the program
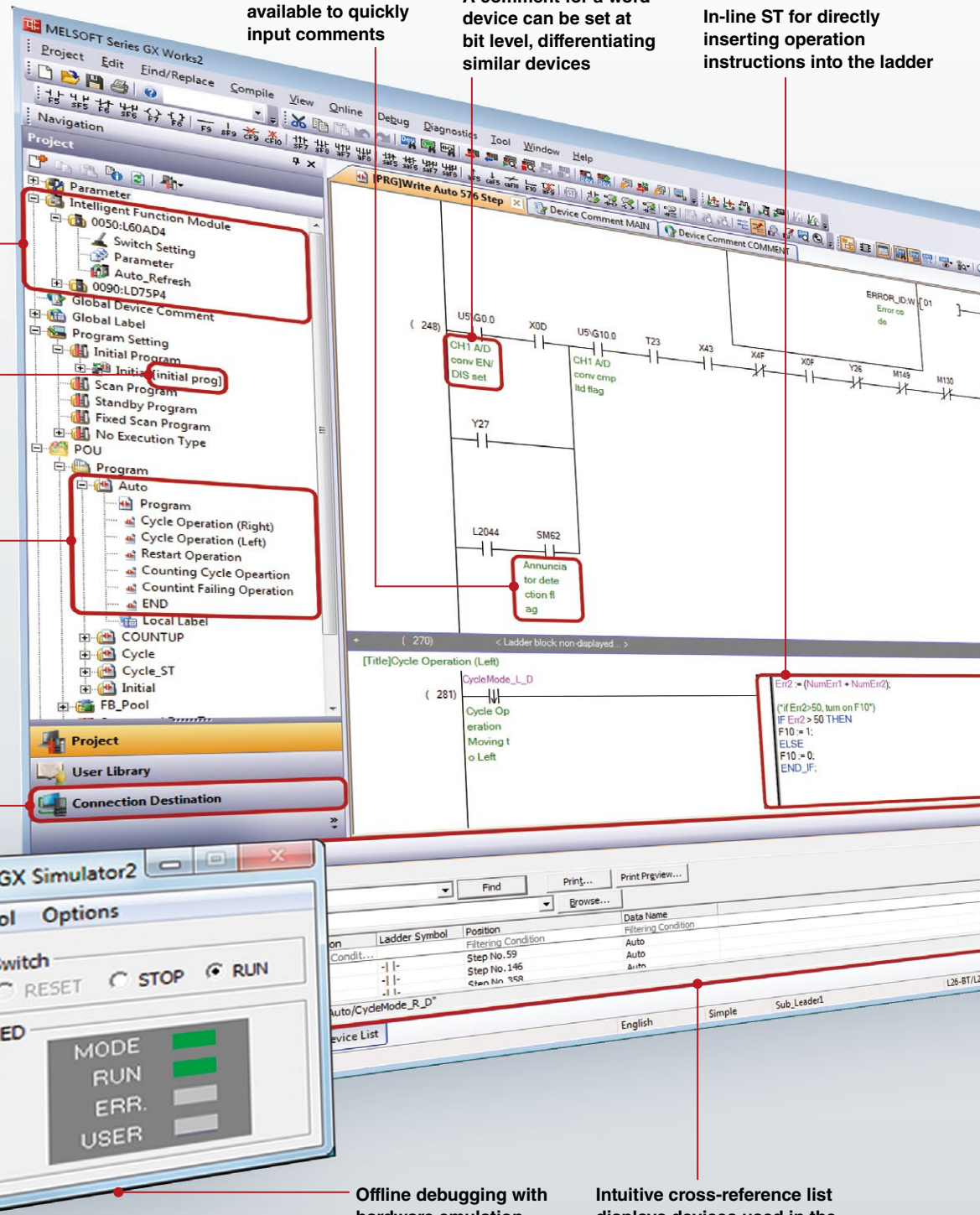
Engineering software designed for easy usability

GX Works2 has been designed to realize intuitive programming, maintenance, and debugging through various integrated features. The software supports IEC 61131-3 programming amongst the compatible programming languages, making it easy to use across multiple applications. It has an extensive maintenance features set, allowing easy setup of the control system, connected networks, and various intelligent I/O. GX Works2 is designed with customers in mind including consolidated "all-in-one" packaged programming that integrates programming, configuration and simulation tools.

Watch window for quick device/label monitoring
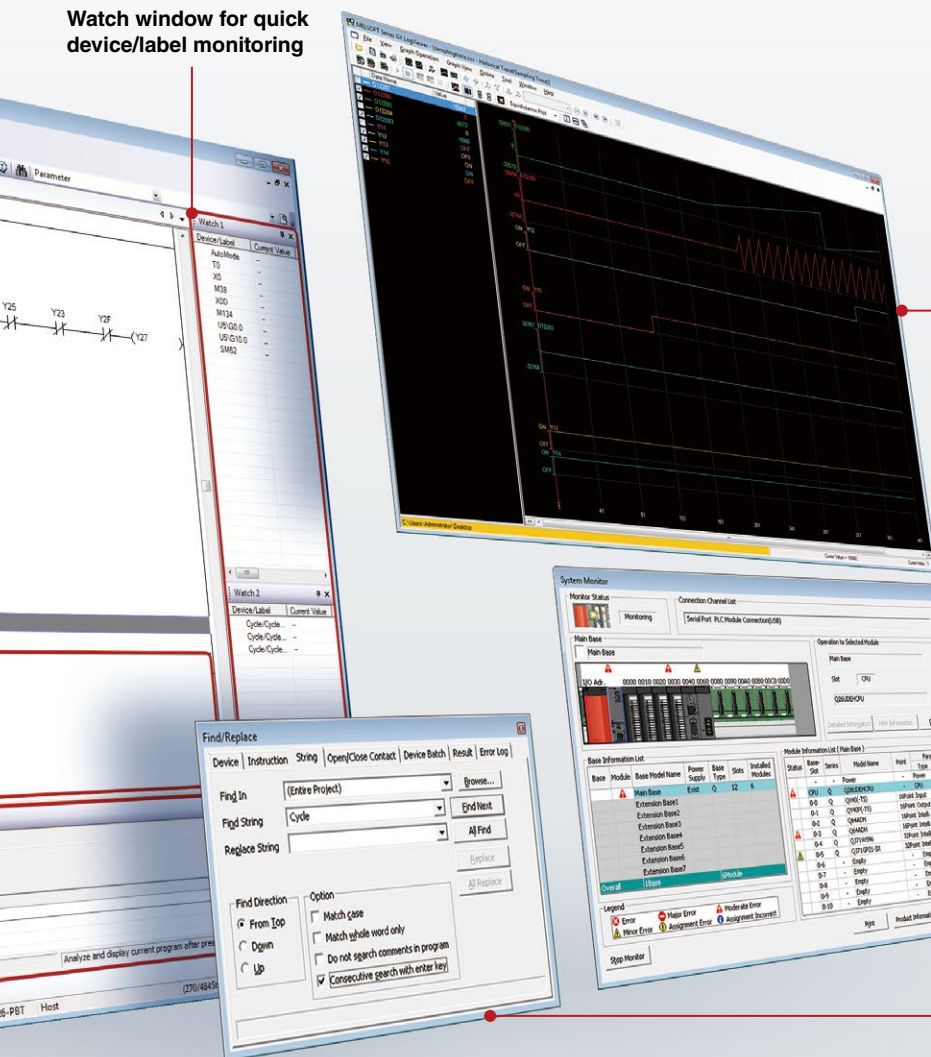
Sampling trace enables reduced setup and maintenance

System monitoring provides easier maintenance

Further simplify debugging with device search functionality
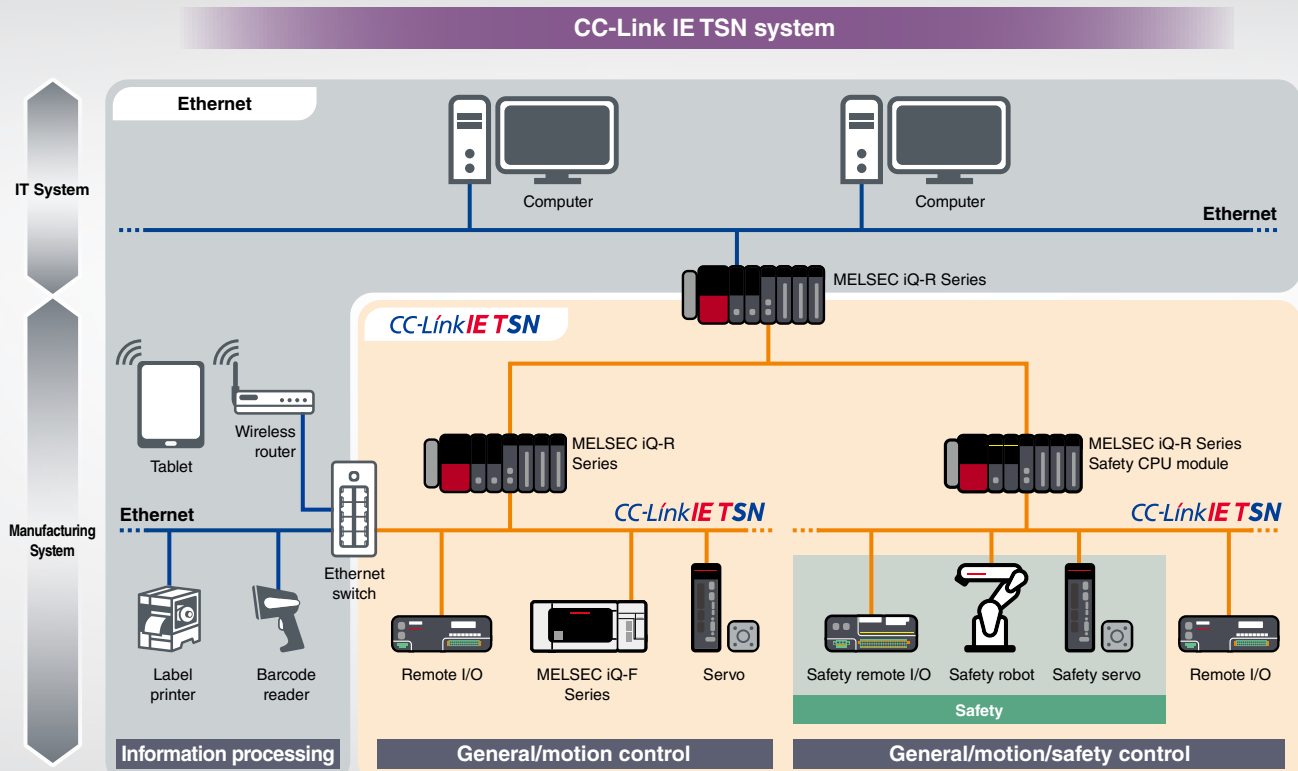
Intuitive project management

The project tree view, which is situated to the left of the docking window, enables easy understanding and management of the entire project. Various features such as viewing titles and handling multiple projects enable a very efficient and cost-effective way to manage projects, substantially reducing the overall engineering time. Project restoration is also easy using the back-up and restore feature.

Extensive program standardization

Program standardization is simplified using function blocks (FBs) within the program. The FBs make it easy to duplicate programming code that can be used multiple times in the project, or for other projects. This reduces programming time and realizes more efficient programming. A function library is also available, enabling standard FBs to be imported into projects, which saves on initial creation time.

Easy maintenance and debugging

Dedicated system monitoring and PLC diagnostics simplify control system maintenance and make error monitoring easy. Various security features are incorporated to protect intellectual property, such as controlling access to projects involving multi-person development teams using hierarchal-dependent access. Debugging using comments and project simulation is fairly easy, requiring no hardware.

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CC-Link IE TSN

CC-Link IE TSN

Open integrated networking across the manufacturing enterprise

Intelligence
Connectivity
TSN
Performance
Open integrated network
CC-Link IE TSN

CC-Link IE TSN system

Ethernet

IT System

Computer

Computer

Ethernet

MELSEC iQ-R Series

CC-Link IE TSN

Tablet

Wireless router

Ethernet

Ethernet switch

MELSEC iQ-R Series

MELSEC iQ-R Series Safety CPU module

CC-Link IE TSN

CC-Link IE TSN

Manufacturing System

Label printer

Barcode reader

Remote I/O

MELSEC iQ-F Series

Servo

Safety remote I/O

Safety robot

Safety servo

Remote I/O

Safety

Information processing

General/motion control

General/motion/safety control

CC-Link IE TSN (Ethernet-based)

| MELSEC iQ-R Series | MELSEC iQ-F Series |

■ CC-Link IE TSN supports TCP/IP communications and applies it to industrial architectures through its support of TSN enabling real-time communications

■ Seamless coordination between the IT system and the shop floor makes CC-Link IE TSN ideal for building an IIoT[*1] infrastructure across the entire manufacturing enterprise

■ One network enables motion control and safety communication, eliminating the need to install multiple networks for different control purposes

*1. IIoT: Industrial Internet of Things

| Performance	Intelligence	Connectivity
Communication according to device characteristics (1 Gbps/100 Mbps)	Automatic generation of network configuration	Mixed TCP/IP communication
Information communication not affecting control performance	Easy diagnostics and data collection	Automatic parameter distribution
High-speed I/O control	Error cause identification by time-series analysis	Line, star, and ring topologies
High-accuracy motion control	Mixed safety communication	Utilize other network devices

For further details, please refer to the catalogs below.
"CC-Link IE TSN Product Catalog: L(NA)08656ENG"
"Ethernet-based Open Network CC-Link IE Product Catalog:
 L(NA)08111E"
"Open Filed Network CC-Link Compatible Product Catalog:
 L(NA)08038E"

CC-Link IE Control/Field Network system
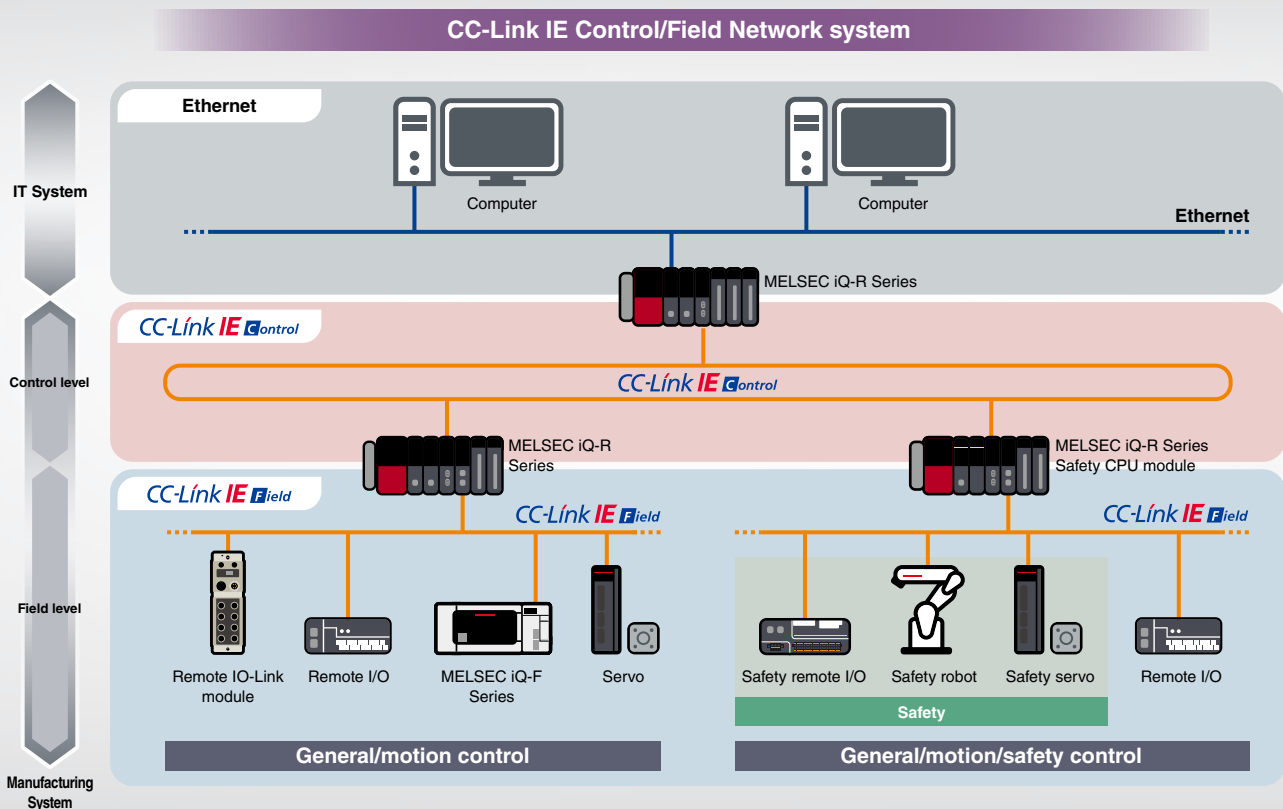
CC-Link IE Control Network (Ethernet-based)

MELSEC iQ-R Series	MELSEC-Q Series	MELSEC-L Series	MELSEC iQ-F Series

■Supports large-scale distributed control
■Enables data communication by connecting controllers in a factory
■Use of an optical fiber cable with long-distance and noise immunity performance realizes high-speed and large-capacity communication between controllers

CC-Link IE Field Network (Ethernet-based)

MELSEC iQ-R Series	MELSEC-Q Series	MELSEC-L Series	MELSEC iQ-F Series

■Integrates communications of control data for I/O devices within equipment and management data between equipment
■Choose a best fit topology from a line, star, or ring according to the production site layout
■Supports small-scale to large-scale networks

CC-Link IE (RS-485-based)

MELSEC iQ-R Series	MELSEC-Q Series	MELSEC-L Series	MELSEC iQ-F Series

■The RS-485-based CC-Link Network is available in five communication speeds (156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps, 10 Mbps) according to the overall system distance and installation environment
■The remote station can communicate with 32 remote devices maximum
■The network can be used for a small- to medium-scale network system

MELSEC History

1980s

1990s

MELSEC

Small-scale and stand-alone

● F Series

● FX Series

Towards high functionality/performance
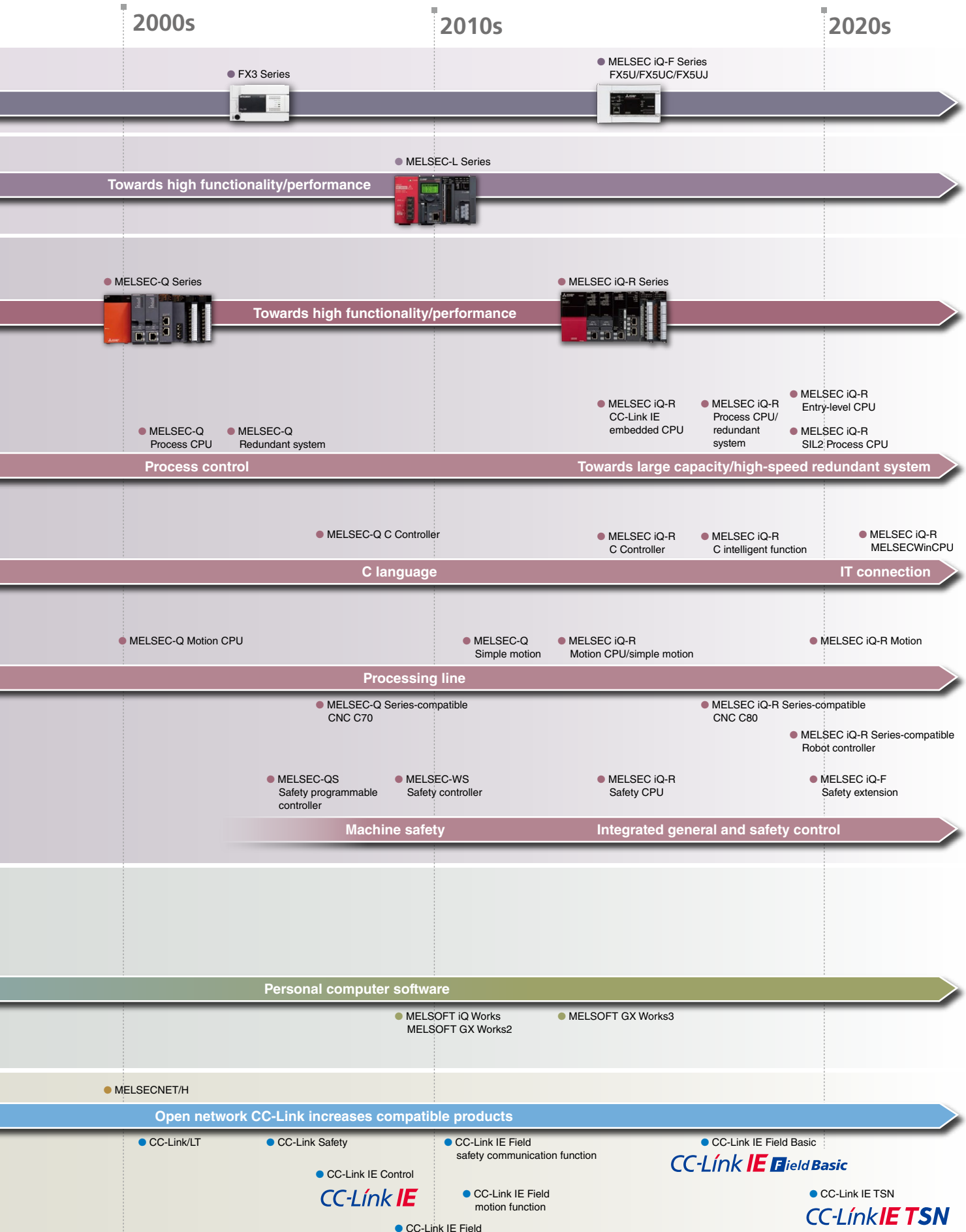
Small- to medium-scale control

● MELSEC-AnS Series

● MELSEC-QnAS Series

Smaller size

Smaller size

Medium- to large-scale control

● MELSEC-K Series

● MELSEC-A Series

● MELSEC-QnA Series

● MELSEC-310

● MELSEC-008

● MELSEC-007

Process/ redundant system

● MELSEC-A
Multiplex system

● MELSEC-QnA
Redundant CPU

Highly reliable system

Redundant system

Advanced information system/ replacement with board computer

● MELSEC-LM

Integrated information processing and control

Other integrated control systems

● MELSEC-A
Position detection, multi-axis positioning

Multi-axis synchronization

Safety system

Engineering environment

● K6GPP

● A6GPP

● A6HGP

● A6PHP

● A7PHP

● A7HGP

Programming machine

● GPPA
(Personal computer
version for A Series)

● GPPQ
(Personal computer
version for
QnA Series)

● MELSOFT
GX Developer
(Windows®
version)

Network

● MELSECNET

● MELSECNET/MINI

● MELSECNET/10

● MELSECNETⅡ

● CC-Link

CC-Link

MELSEC with history and experience.
Satisfying new challenges while utilizing past expertise.

2000s **2010s** **2020s**

● FX3 Series

● MELSEC iQ-F Series
FX5U/FX5UC/FX5UJ

● MELSEC-L Series

Towards high functionality/performance

● MELSEC-Q Series

● MELSEC iQ-R Series

Towards high functionality/performance

● MELSEC iQ-R
CC-Link IE
embedded CPU

● MELSEC iQ-R
Process CPU/
redundant
system

● MELSEC iQ-R
Entry-level CPU

● MELSEC-Q
Process CPU

● MELSEC-Q
Redundant system

● MELSEC iQ-R
SIL2 Process CPU

Process control   **Towards large capacity/high-speed redundant system**

● MELSEC-Q C Controller

● MELSEC iQ-R
C Controller

● MELSEC iQ-R
C intelligent function

● MELSEC iQ-R
MELSECWinCPU

C language   **IT connection**

● MELSEC-Q Motion CPU

● MELSEC-Q
Simple motion

● MELSEC iQ-R
Motion CPU/simple motion

● MELSEC iQ-R Motion

Processing line

● MELSEC-Q Series-compatible
CNC C70

● MELSEC iQ-R Series-compatible
CNC C80

● MELSEC iQ-R Series-compatible
Robot controller

● MELSEC-QS
Safety programmable
controller

● MELSEC-WS
Safety controller

● MELSEC iQ-R
Safety CPU

● MELSEC iQ-F
Safety extension

Machine safety   **Integrated general and safety control**

Personal computer software

● MELSOFT iQ Works
MELSOFT GX Works2

● MELSOFT GX Works3

● MELSECNET/H

Open network CC-Link increases compatible products

● CC-Link/LT

● CC-Link Safety

● CC-Link IE Field
safety communication function

● CC-Link IE Field Basic

● CC-Link IE Control

CC-Link IE Field Basic

CC-Link IE

● CC-Link IE Field
motion function

● CC-Link IE TSN

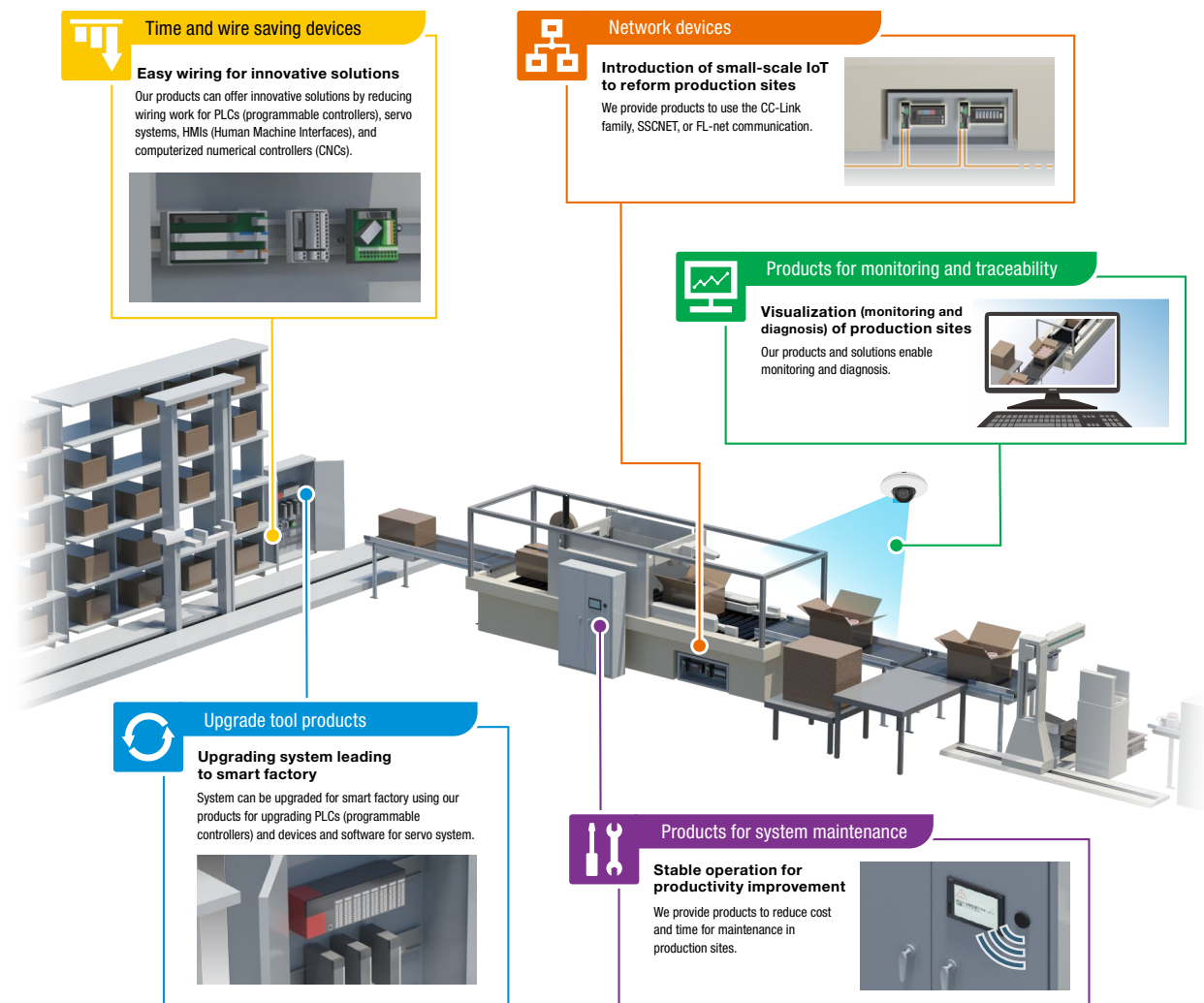● CC-Link IE Field

CC-Link IE TSN

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FA Partner

FA goods

MITSUBISHI ELECTRIC ENGINEERING CO., LTD.

Useful products to be used in combination with MELSEC programmable controllers are available. Use of these products will help reduce commissioning time of panel design, implementation time of facility replacement, etc.

Time and wire saving devices

Easy wiring for innovative solutions

Our products can offer innovative solutions by reducing wiring work for PLCs (programmable controllers), servo systems, HMIs (Human Machine Interfaces), and computerized numerical controllers (CNCs).

Network devices

Introduction of small-scale IoT to reform production sites

We provide products to use the CC-Link family, SSCNET, or FL-net communication.

Products for monitoring and traceability

Visualization (monitoring and diagnosis) of production sites

Our products and solutions enable monitoring and diagnosis.

Upgrade tool products

Upgrading system leading to smart factory

System can be upgraded for smart factory using our products for upgrading PLCs (programmable controllers) and devices and software for servo system.

Products for system maintenance

Stable operation for productivity improvement

We provide products to reduce cost and time for maintenance in production sites.

Website www.mitsubishielectricengineering.com/sales/fa/meefan/ ▶Contact US

FACTORY AUTOMATION SOLUTION PARTS   MITSUBISHI ELECTRIC SYSTEM&SERVICE CO.,LTD.

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Renewal Tool-related products

Inverter-related products

Factory Automation Solution Parts

www.melsc.co.jp/business/overseas/

For details of Mitsubishi Electric System & Service Co., Ltd. products, please contact us via email.
OVERSEAS SERVICE SECTION mail: osb.webmaster@melsc.jp

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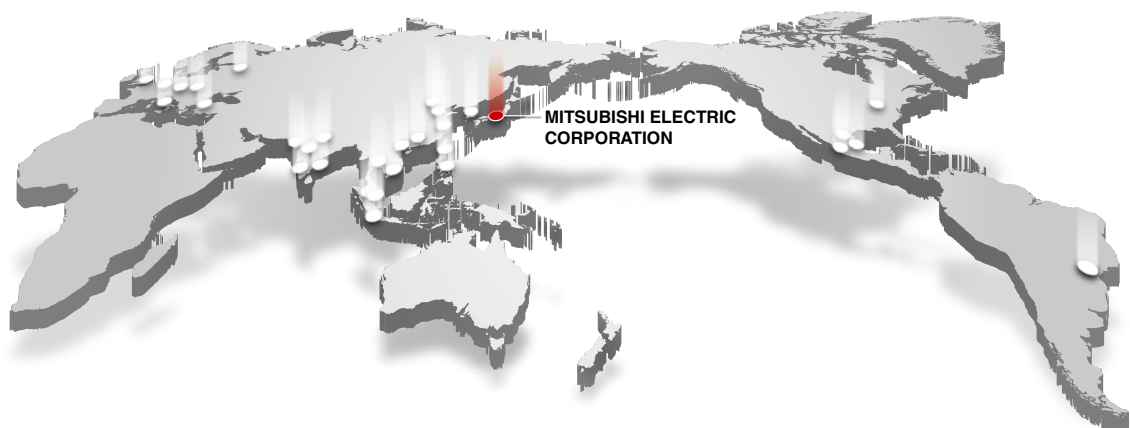MITSUBISHI ELECTRIC AUTOMATION, INC. Queretaro Office
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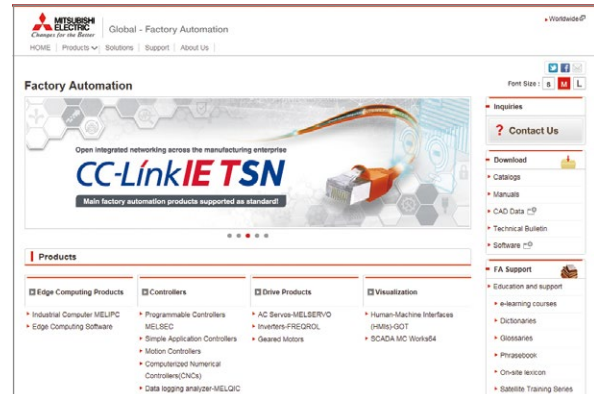
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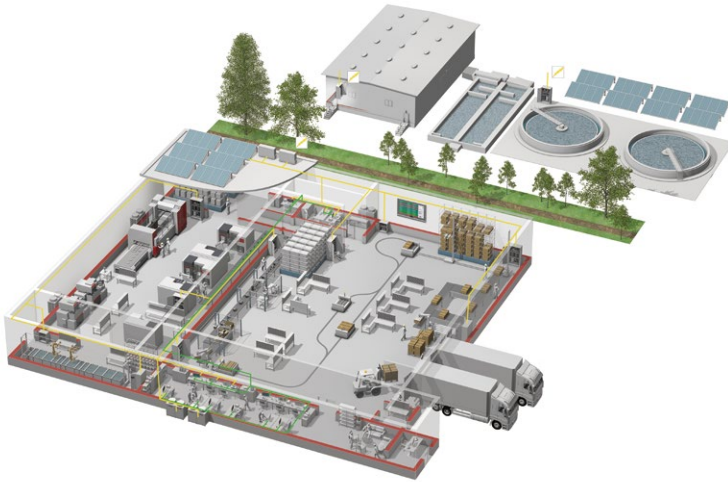
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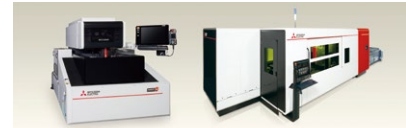
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