

Ethernet-based Open Network CC-Link IE Product Catalog

e-Factory



Seamless connectivity within all levels of automation

CC-Link IE

Ethernet-based integrated network

GLOBAL IMPACT OF MITSUBISHI ELECTRIC



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

Changes for the Better

We bring together the best minds to create the best technologies. At Mitsubishi Electric, we understand that technology is the driving force of change in our lives. By bringing greater comfort to daily life, maximizing the efficiency of businesses and keeping things running across society, we integrate technology and innovation to bring changes for the better.

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

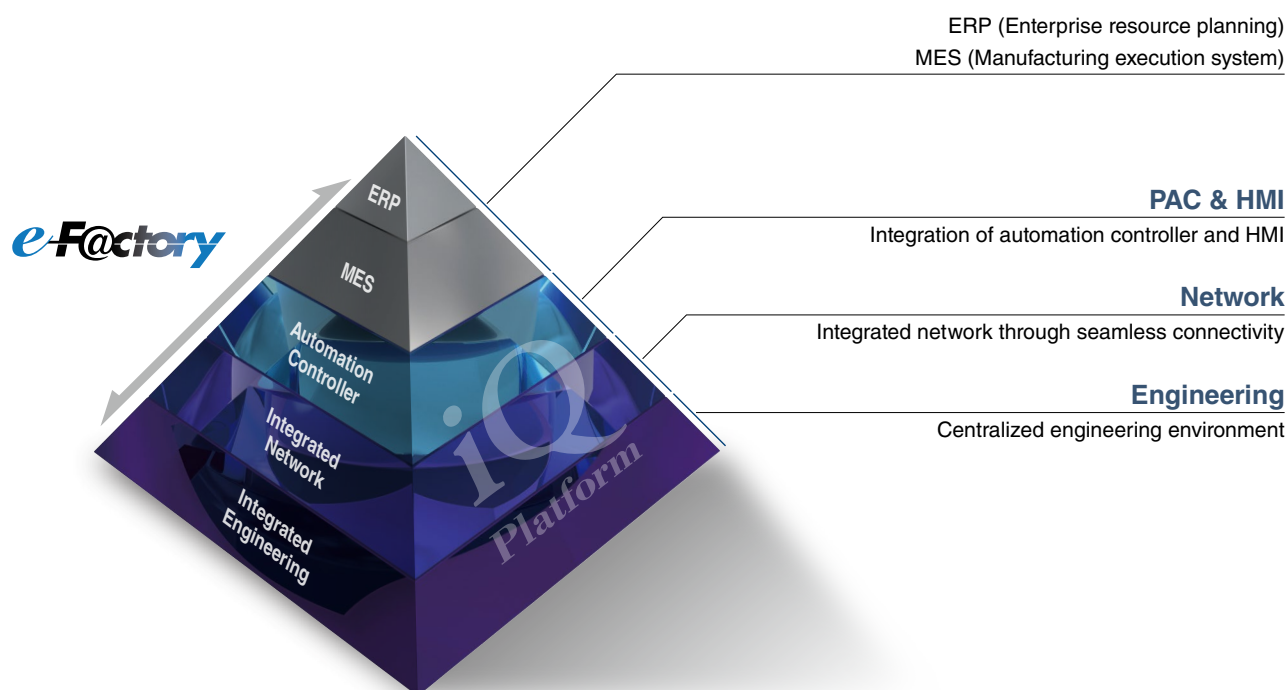
Maximizing productivity and efficiency with cutting-edge automation technology.



FA Integrated Platform
"iQ Platform" Movie

iQ Platform for maximum return on investment

Minimize TCO, Seamless integration, Maximize productivity, Transparent communications: these are common items that highlight the benefits of the iQ Platform and e-F@ctory. The iQ Platform minimizes TCO at all phases of the automation life cycle by improving development times, enhancing productivity, reducing maintenance costs, and making information more easily accessible across the plant. Together with e-F@ctory, offering various best-in-class solutions through its e-F@ctory alliance program, the capabilities of the manufacturing enterprise is enhanced even further realizing the next level for future intelligent manufacturing plants.



Features

Applications

Products

Options

Development tool

Product list

Further reduce TCO while securing your manufacturing assets

Automation Controller

Improve productivity and product quality

1. High-speed system bus realizing improved system performance
2. On-screen multi-touch control enabling smooth GOT (HMI) operations

Integrated Network

Best-in-class integrated network optimizing production capabilities

1. CC-Link IE supporting 1 Gbps high-speed communication
2. Seamless connectivity within all levels of manufacturing with SLMP

Centralized Engineering

Integrated engineering environment with system level features

1. Automatic generation of system configuration
2. Share parameters across multiple engineering software via MELSOFT Navigator
3. Changes to system labels are reflected between PAC and HMI





Extensive visualization with advanced data connectivity

Big Data analytics requires deterministic data collection, which can be realized by incorporating two key features: SLMP*1 that enables seamless connectivity between devices in the IT layer and on the shop floor; and a high-speed, large-capacity 1 Gbps communications network that enables the handling of large-data, such as production, quality and control data between different production processes.

General, motion and safety control integrated into one network

CC-Link IE incorporates generic distributed control, synchronous motion control, and safety control enabling safety communications across multiple safety devices, all on the same network. The topology is quite versatile, based on twisted-pair cables, which enables flexibility in system configuration while helping to keep installation cost low.

Comprehensive diagnosis realizing higher reliability

Disruptions to the control system are kept to a minimum via comprehensive diagnostics functions, high communications integrity owing to the noise-resistant characteristics of the optical cable, and communication re-routing capabilities made possible as the result of using a ring topology. Also, network errors can be rectified quickly by visualizing the network system image using the engineering software*2, and remotely from a GOT (HMI) directly on the machine or production line.

*1. Seamless Message Protocol

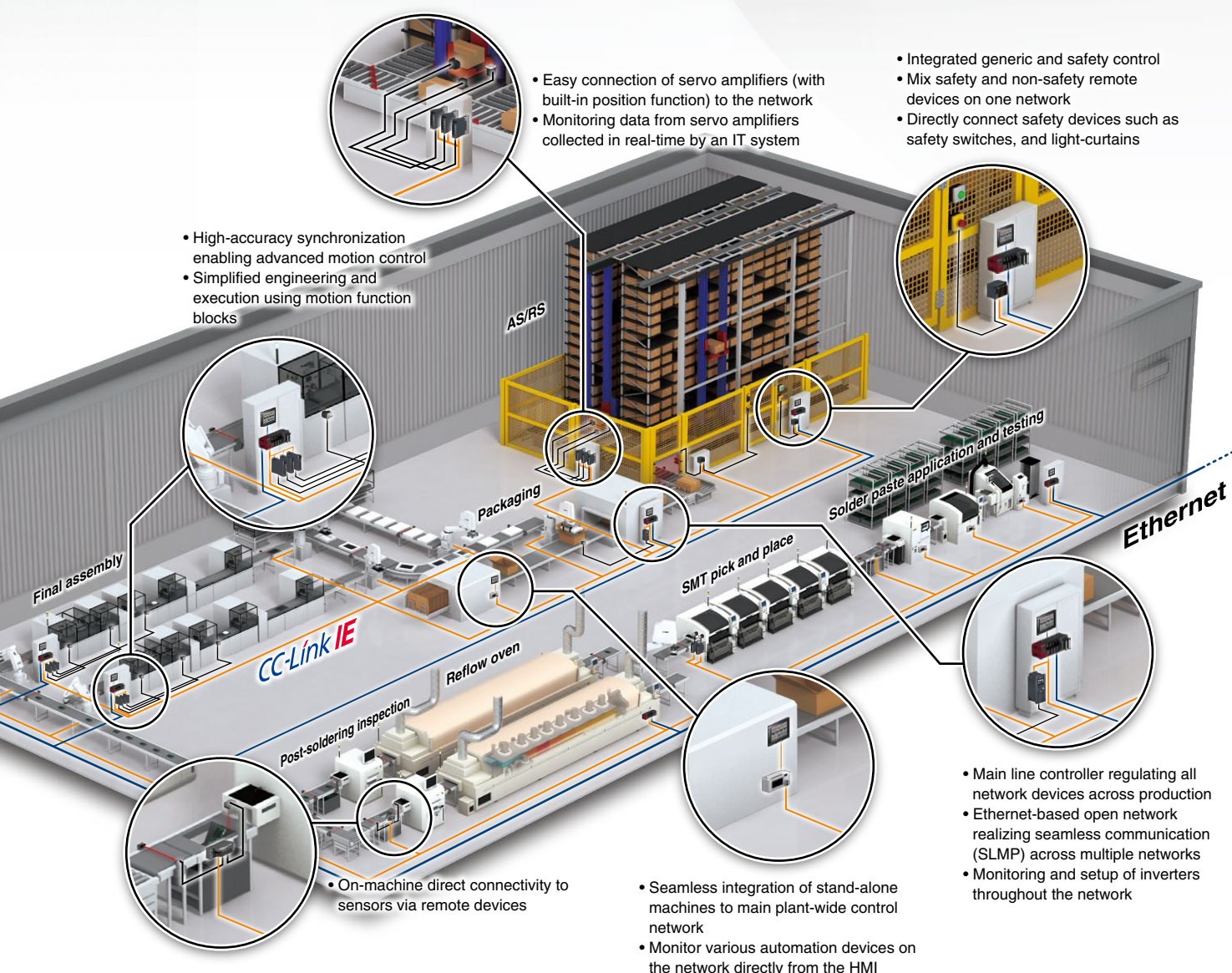
*2. MELSEC iQ-R Series is supported by GX Works3.

MELSEC-Q Series and MELSEC-L Series are supported by GX Works2.

Seamless connectivity within all levels of automation

The backbone of e-F@ctory, leveraging connectivity between the shop floor and IT

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High-speed communications realizes shorter and more stable operating cycle, enabling higher productivity

- Shorten the operating cycle
- Improve productivity
- Extensive traceability

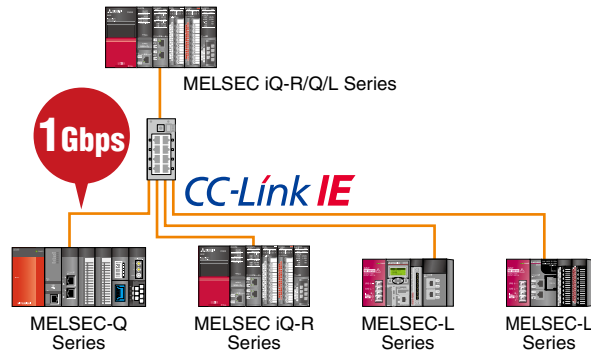


High-speed 1 Gbps communication

High-speed communication enabling shorter operating cycle

The transfer rate of 1 Gbps results in high-speed communications (controller-to-controller and controller-to-field device), thereby reducing operating cycle time. The network, which accommodates general high-speed I/O control, can also accommodate control of distributed controllers in multiple fields, enabling simple network configuration. This network is fully capable of transmitting large volume of data, which can be handled by high-function field devices. With the ability to transfer large amounts of traceability data, a system capable of highly-detailed diagnostics can also be realized.

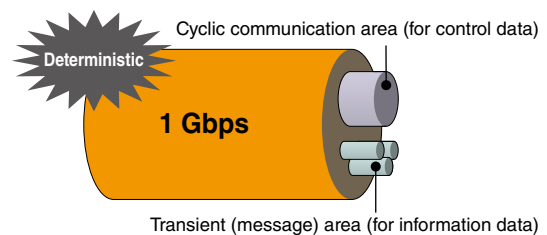
Example based on CC-Link IE Field Network



Stable cyclic communication

Improve productivity

The 1 Gbps bandwidth is divided between deterministic (cyclic) and transient (message) communications. Cyclic communications, which is used for I/O control is deterministic and its performance will not degrade even when large volumes of traceability and diagnostic data are transferred via transient communication.



Real-time collection of shop floor data

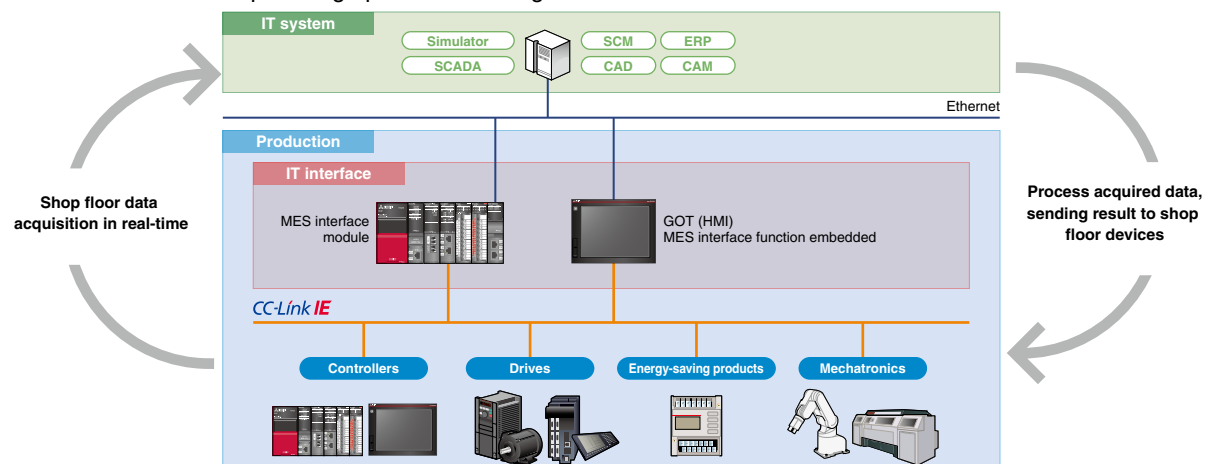
- Integrate PLM^{*1} tools
- Identify shop floor activities speedily, accurately, and efficiently



Integrated network

Backbone of e-F@ctory, connecting shop floor and IT

All the systems related to factory production, quality, and safety are integrated into one network, helping to visualize and process factory floor (shop floor) data. Data obtained on the factory floor is transmitted to the IT system for analysis or further processing, and then the result can be sent back, realizing a bidirectional communications flow optimizing operations management.



*1. Product Lifecycle Management.

Reduce installation cost with widely-available Ethernet components

- Use widely-available components for overseas production sites
- Procure system components for less

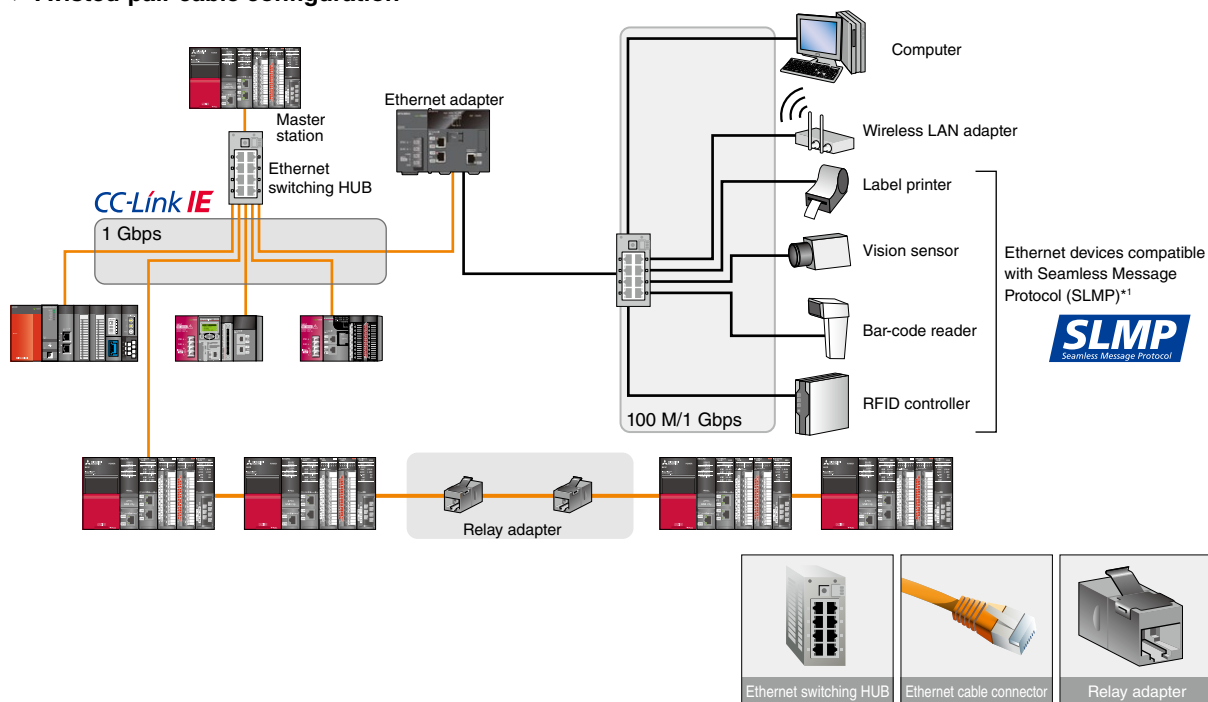


Ethernet-based network

■ Built on global standards

CC-Link IE has been designed to make use of widely-available Ethernet components including cables, connectors, and adapters. Thanks to the common availability of these components, network configuration cost can be saved.

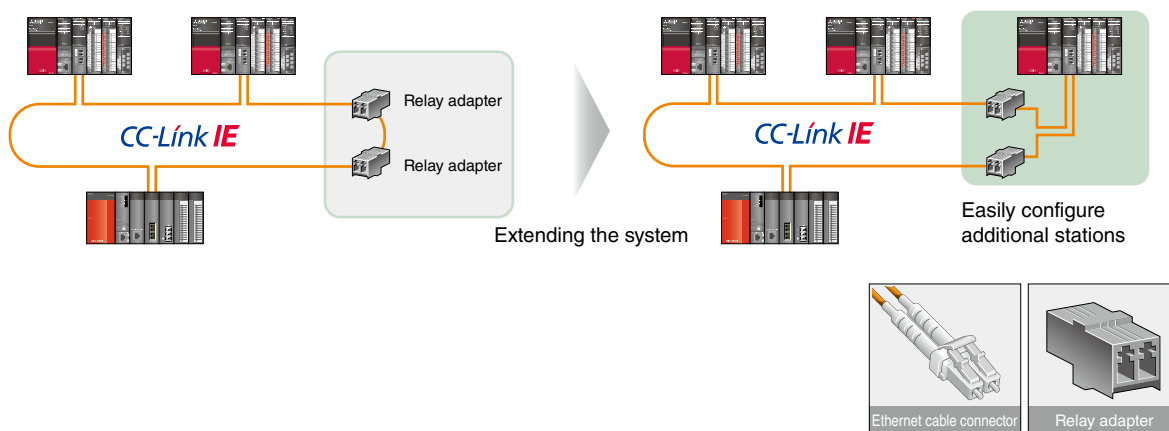
► Twisted-pair cable configuration



The Ethernet adapter unit realizes connection of SLMP*1 compatible Ethernet devices to a CC-Link IE Field Network. Various devices can be connected such as vision sensors and RFID controllers.

*1. SLMP (Seamless Message Protocol): Is a client/server protocol that enables communications between Ethernet-ready and CC-Link IE compatible devices

► Optical cable configuration





Easily modify existing control system configurations

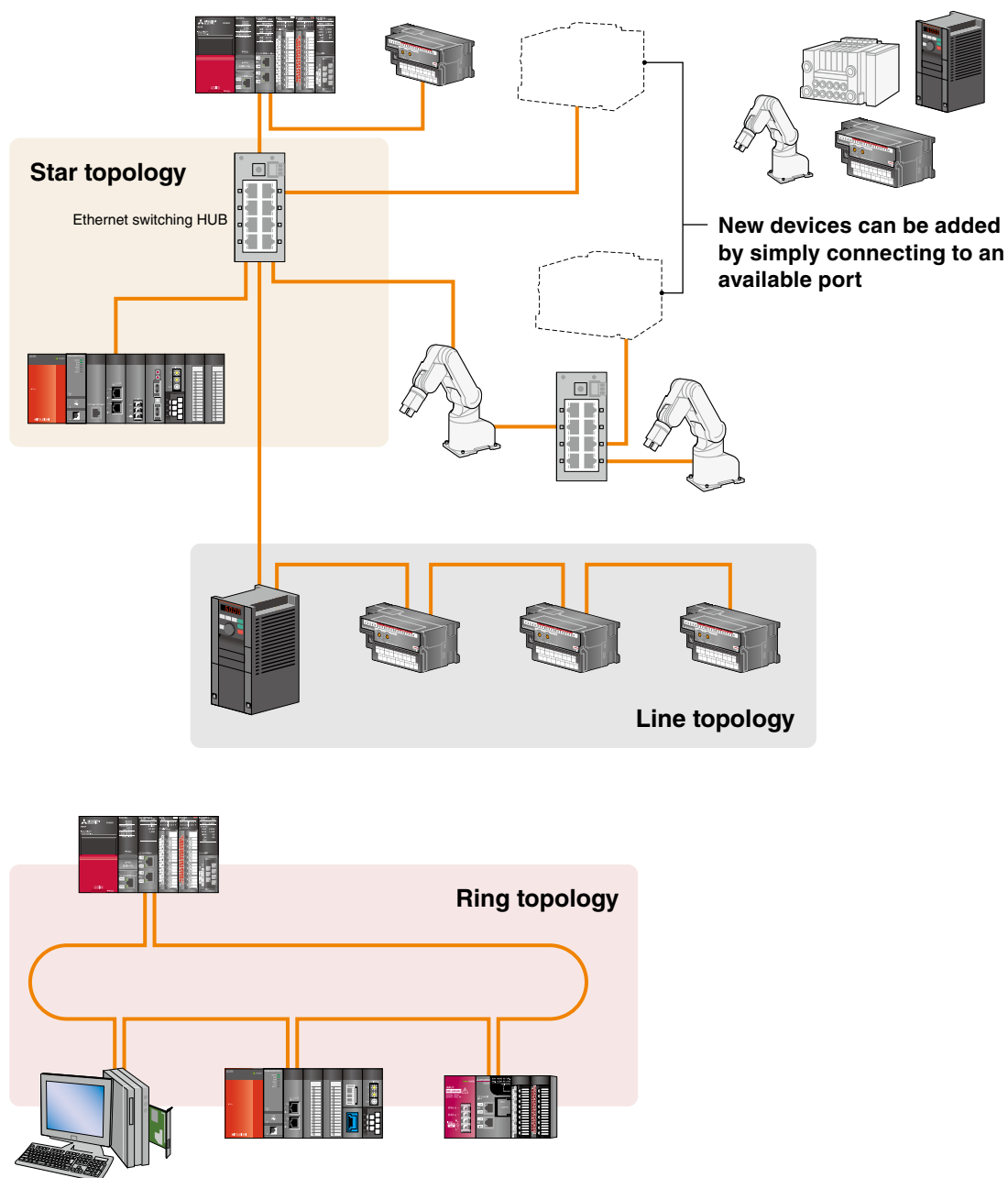
- Supporting frequent modifications of the production line
- Configure equipment more flexibly



Flexible network topology

■ Reconfigure existing systems to match production changes

Multiple network topologies are supported including star, line, ring*¹, star and line combinations. This flexibility allows additional equipment to be simply connected to any available port, with little concern for restrictions.



*1. Cannot be mixed with star or line topology.

Synchronization performance for advanced motion control

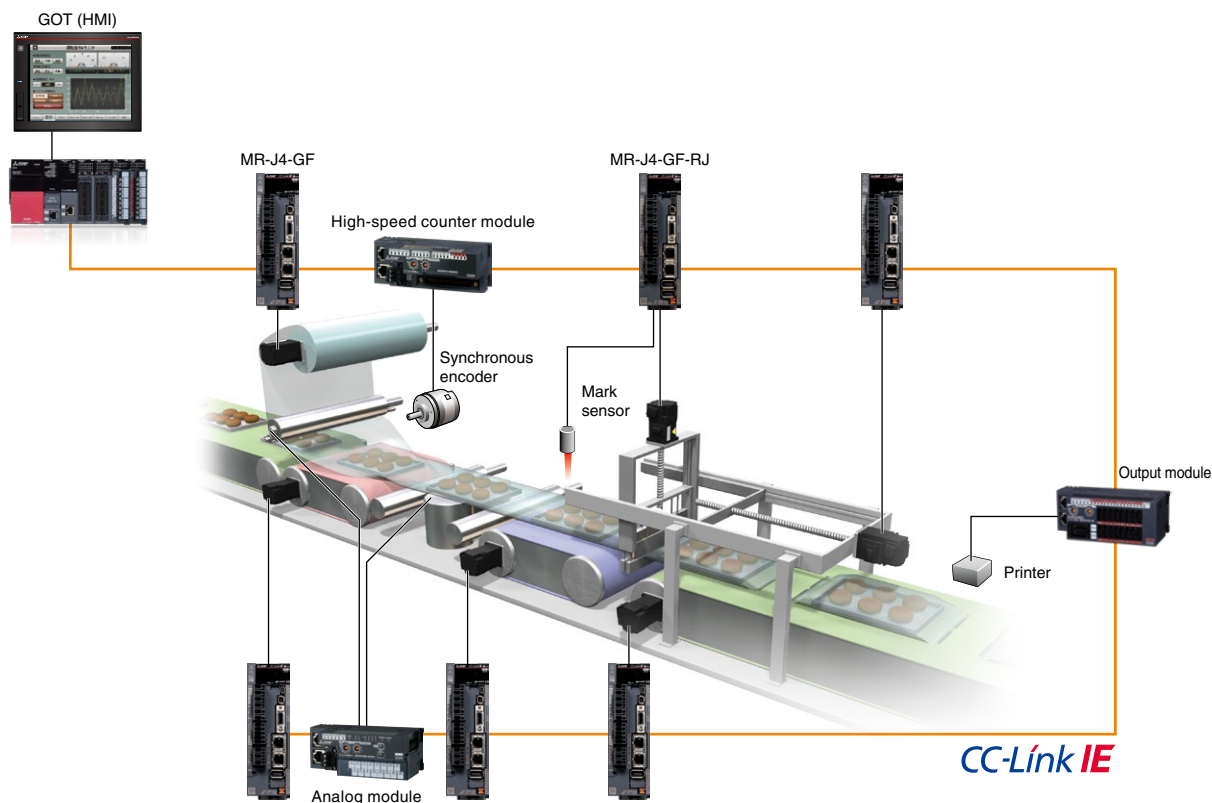
- Integrate networks of a motion control system in one network
- Support advanced machines and systems



High-accuracy synchronization performance

■ High-accuracy synchronization performance for advanced motion control

CC-Link IE Field Network, which supports high-accuracy synchronization, enables advanced motion control as well as I/O control in one network. I/O control synchronized with the motion control can increase the productivity of the machine and the entire system.



Features

Applications

Products

Options

Development tool

Product list



Integrating safety communication on one network

- Enable network communication between Safety CPUs
- Manage standard and Safety CPUs under one network



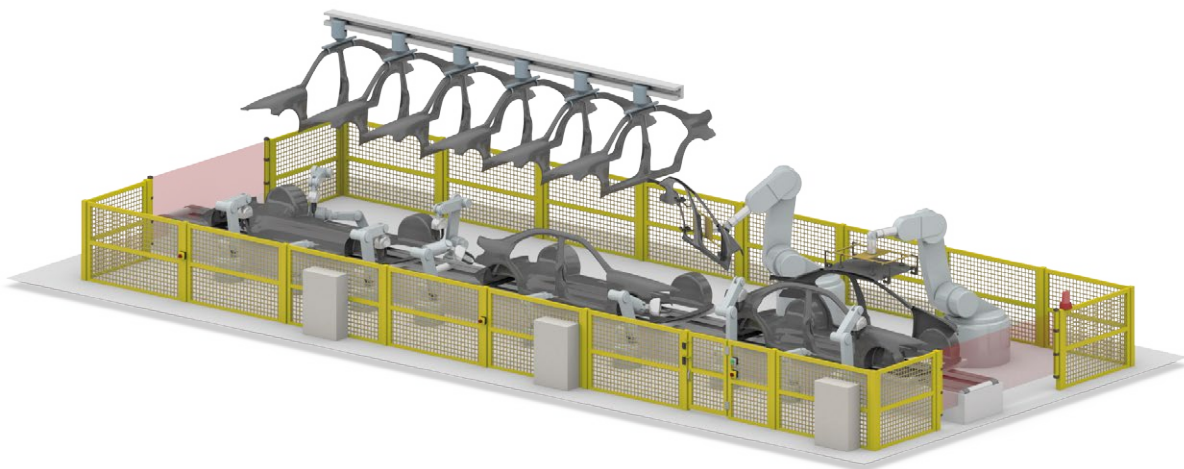
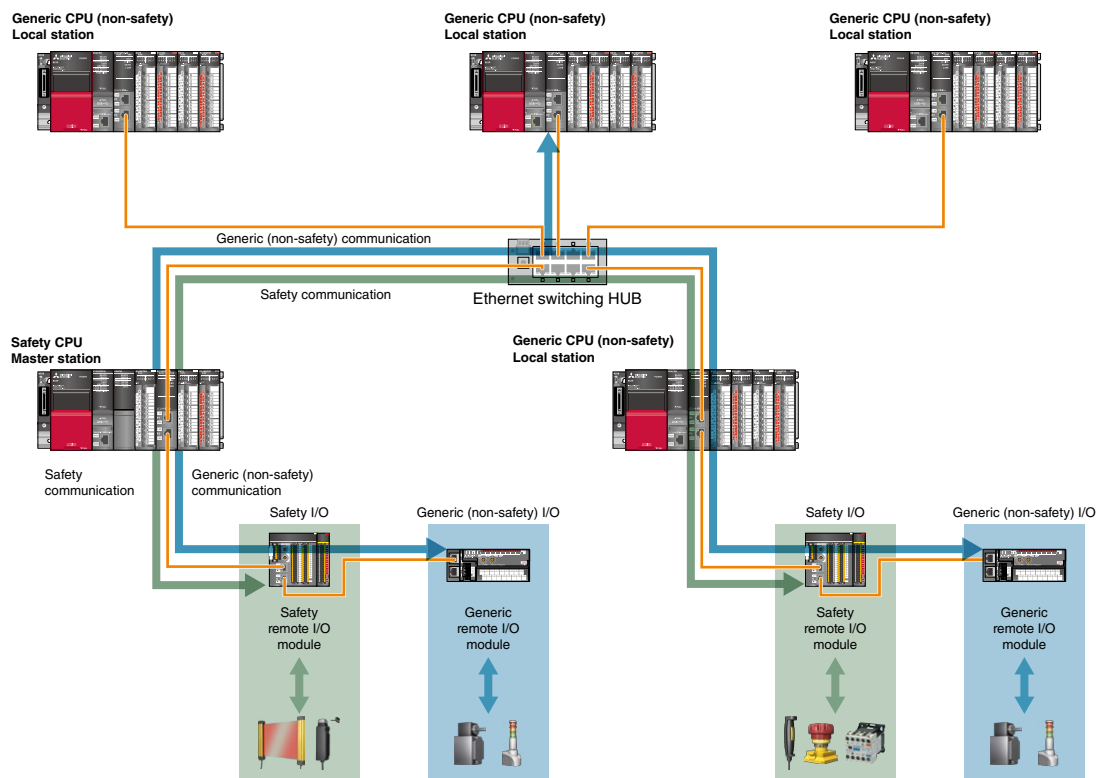
Safety communication

■ Safety and non-safety communications on the same network

The MELSEC iQ-R Series Safety CPU enables both safety and non-safety communications on the same CC-Link IE Field Network. Connectivity to generic and safety control systems can be done without requiring a dedicated safety network which can increase system hardware cost.

Note: The safety communication function and submaster function cannot be used together.

Safety communication between a MELSEC iQ-R Series Safety station and a MELSEC-QS Series Safety station is not supported.



Improve reliability with reduced single-point failure

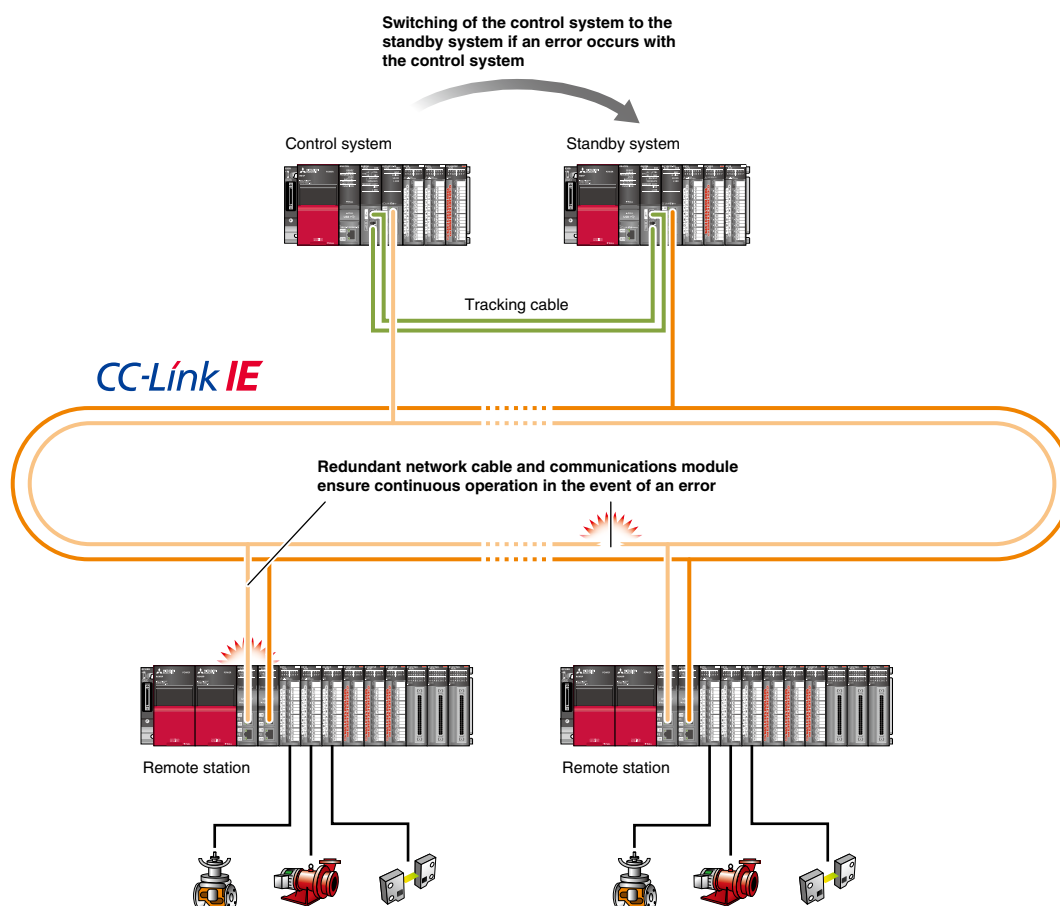
- Maintain communications during an error



High availability system

■ Improve reliability with redundant system

A multi-level redundant system can be realized by installing dual control systems consisting of the control (primary) and standby CPUs combined with a dual cable topology for the network cabling of the CC-Link IE Field networks, and dual remote stations minimizing the risk of single-point failure.





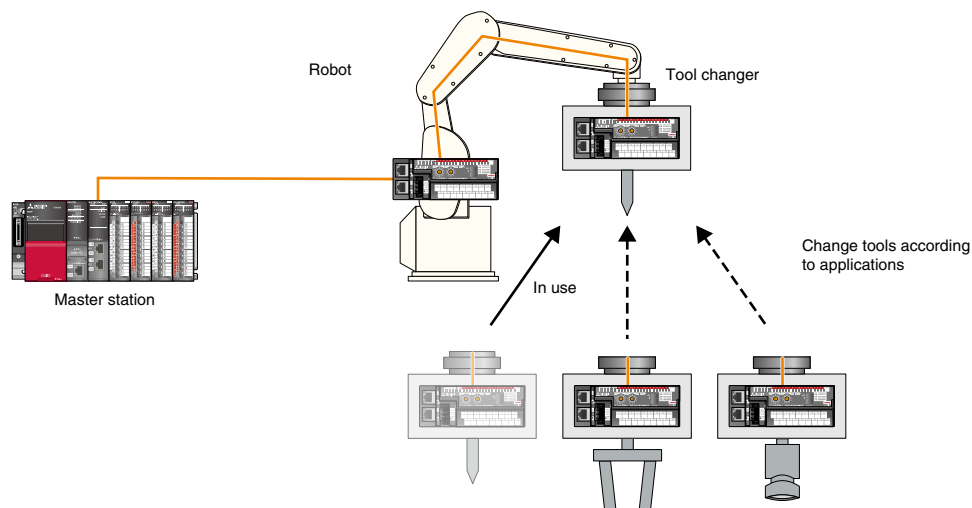
Reduced starting time shortens production cycle

Fast link-up function



■ Reduce starting time with fast link-up function

A remote module supporting fast link-up function*1 enables the disconnected station to return quickly when reconnected with the CC-Link IE Field Network after disconnection. In the system where a tool change mechanism (such as a tool changer) is used, reducing the starting time shortens production cycle time.



*1. For applicable modules, please refer to CC-Link IE Field Network Block type remote modules on page 25.

Seamless integration of devices supporting TCP/IP

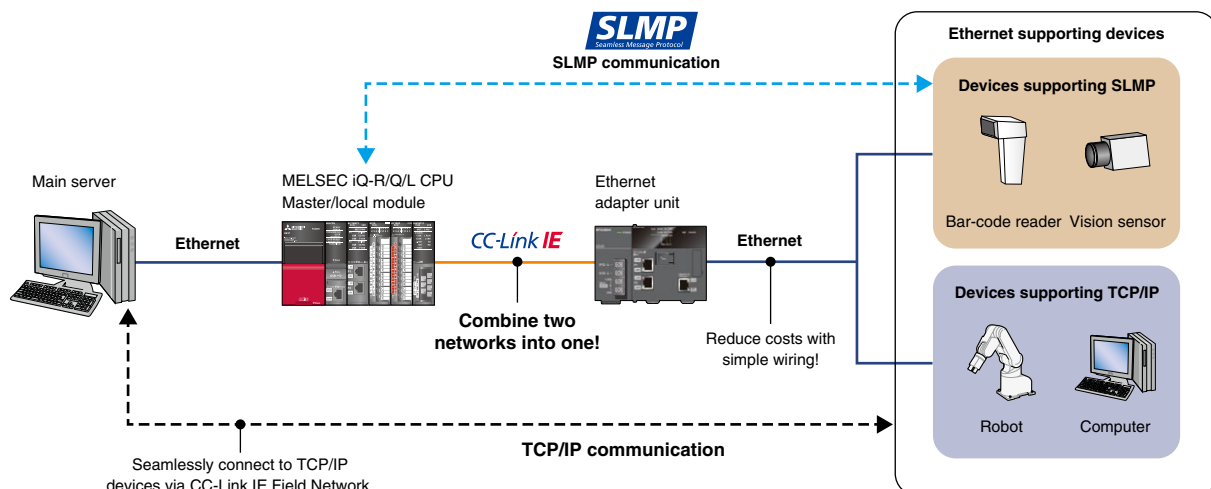
- Keep wiring cost low
- Easy addition of Ethernet-ready devices



IP packet relay function

■ Perform TCP/IP communication under CC-Link IE Field Network

Communication with a designated IP address is possible under CC-Link IE Field Network. Wiring costs can be reduced since there is no need to additionally install an extra Ethernet line along the CC-Link IE Field Network.



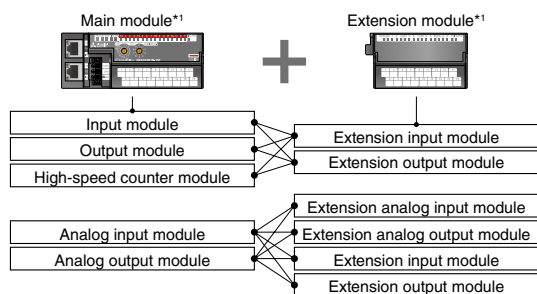
Flexible I/O point extension

Extension function

■ Easily increase I/O points by adding extension modules

Extension function

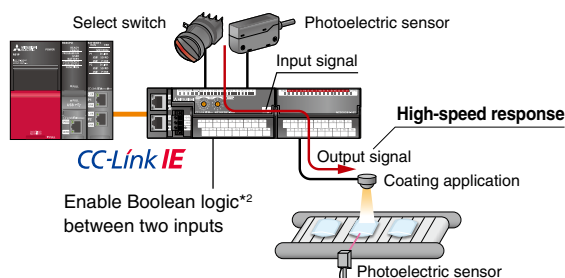
Extension modules are used to increase the number of available I/O points by simply attaching it to the main I/O module, such as digital I/O, analog I/O, and high-speed counter modules.



*1. Extension modules which can connect multiple extension modules are available. For applicable modules, please refer to CC-Link IE Field Network block type remote modules on page 25.

Fast logic function

Output control in accordance with the input status is possible in I/O module without going through the master station.



*2. Both AND logic and OR logic are supported as an output state.

Simple network commissioning

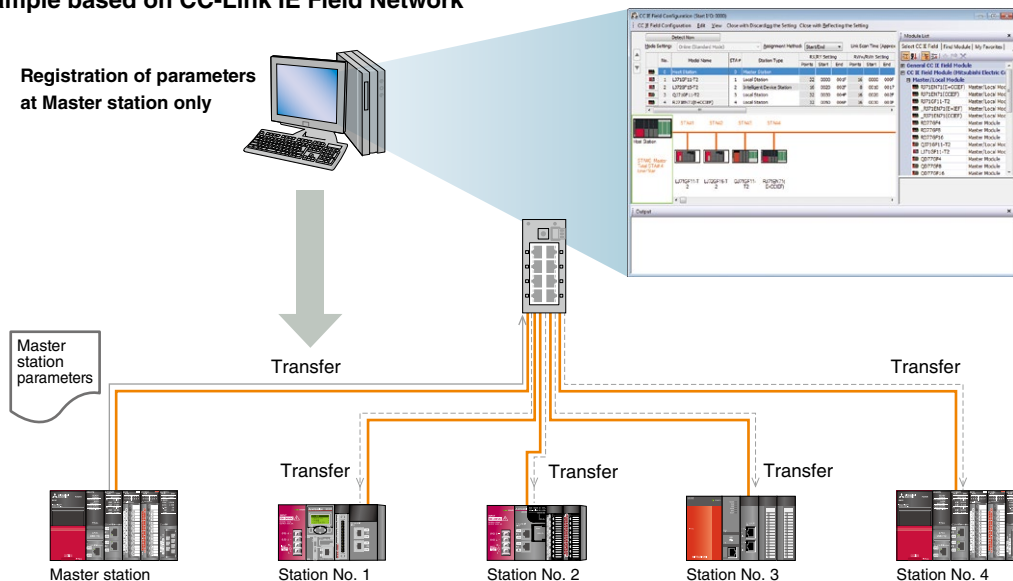
- Set up network parameters from one place
- Create the desired operation by following easy-to-follow configuration steps

Easy setup

■ Network commissioning by parameter setup only

Setting of parameters via the engineering software*3 is quite easy with the master station (for CC-Link IE Field Network) or control station (for CC-Link IE Control Network) requiring registration of parameters only. Both these head stations hold the necessary network parameters to enable network communication with other nodes.

► Example based on CC-Link IE Field Network



*3. MELSEC iQ-R Series is supported by GX Works3.
MELSEC-Q Series and MELSEC-L Series are supported by GX Works2.



Quickly identify wiring and module errors

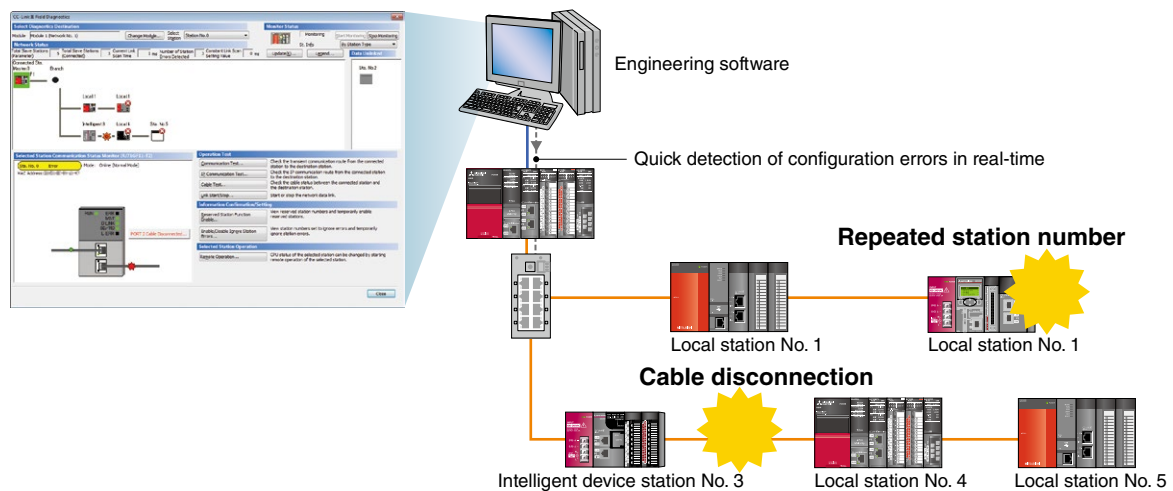
- Easily identify the location of errors
- Remotely identify error details



Easy diagnosis function

■ Diagnose and troubleshoot even with limited knowhow of CC-Link IE

The engineering software*1 enables the easy identification of network errors. Route-cause analysis can be done quickly enabling minimum disruption to the control system. Graphical representation of the network is automatically created on the engineering software, making wiring and programmable controller errors clearly visible. Monitoring is also available on other stations via the network, enabling detection of overlapping station numbers and miswiring at the time that changes are made.



*1. MELSEC iQ-R Series is supported by GX Works3.
MELSEC-Q Series and MELSEC-L Series are supported by GX Works2.

Avoiding entire network outage

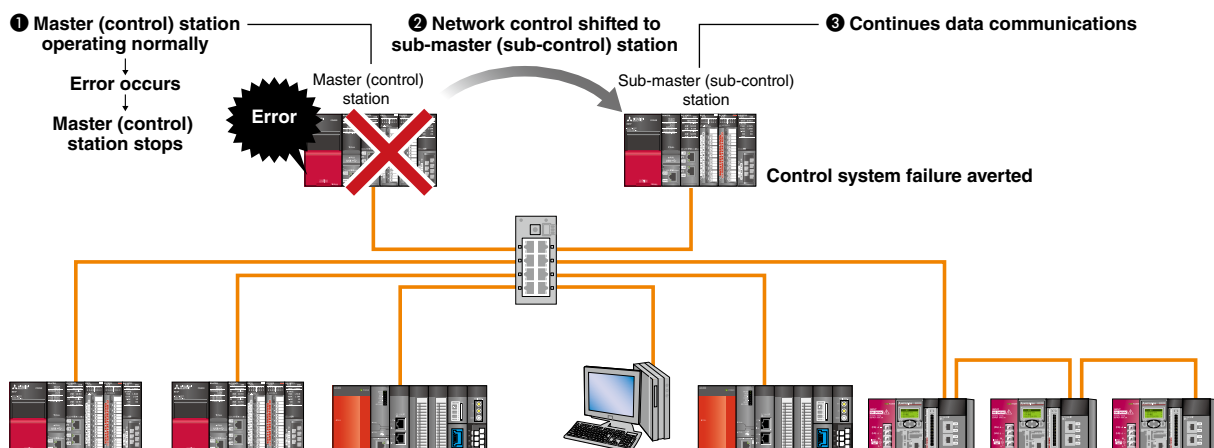
- Avoid disruption to control system
- Maintain communications during an error



Submaster control, control station switching

■ Maintain data communications even if master (control) station stops

In the event that the 'master or control station'*2 develops an error, the 'sub-master or sub-control'*3 station takes over control of the network, ensuring continued network communications even when these nodes are lost.



*2. Referred to as the "Master station" for CC-Link IE Field network, and "Control station" for CC-Link IE Control network.

*3. Referred to as the "Sub-master station" for CC-Link IE Field network, and "Sub-control station" for CC-Link IE Control network.

Exceptionally fault-tolerant dual-loop optical cable

- Reduce the noise influence
- Maintain communications during an error

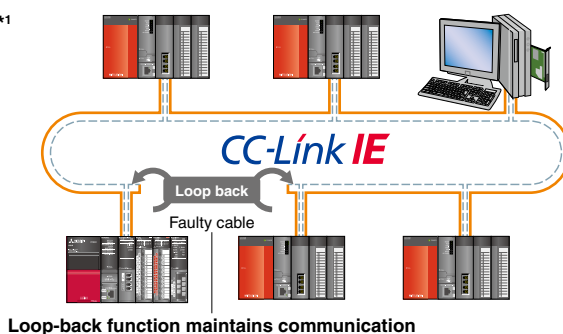


Highly-reliable loop topology

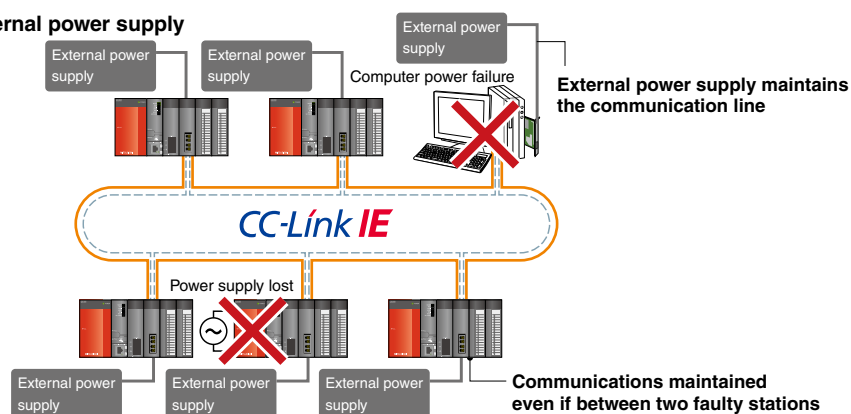
■ Fault-tolerant network

Dual-loop optical cables that provide noise-immunity to Electromagnetic Interference (EMI) and Radio Frequency Interference (RFI) are used. These robust cables include a loop-back function which ensures data communication even when there is a cable disconnection or the power supply is lost. In addition, an external power supply can be connected to modules supporting this feature, ensuring communications even if connection to the controller or computer is lost.

Loop-back function*1



Using an external power supply



*1. Loop-back function is supported when using ring topology with twisted-pair cable (both CC-Link IE Field and Control network).

Semiconductor production system

Seamless communication

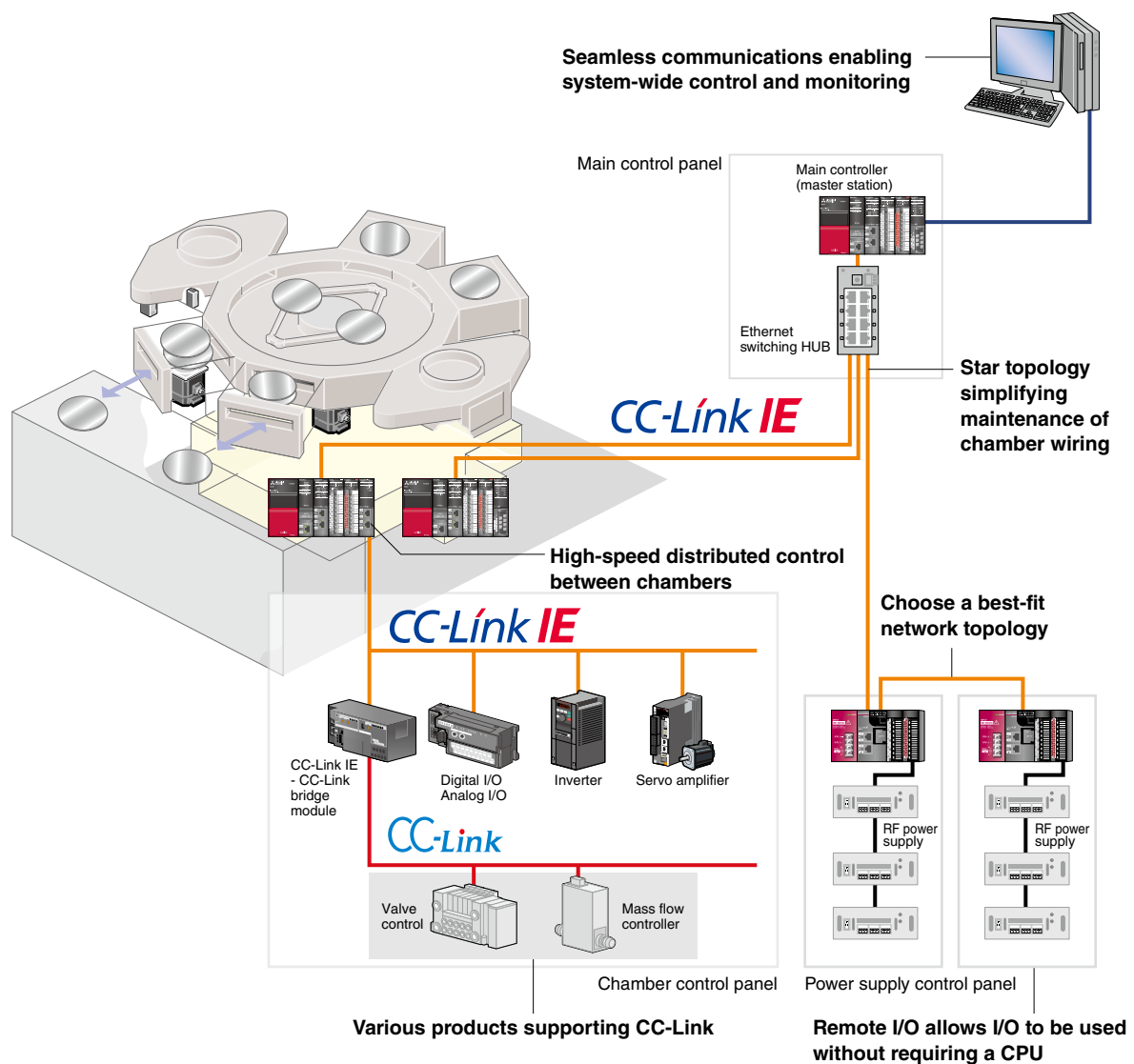
Centralized system operation and monitoring

Flexible wiring

Various equipment layouts by a combination of star and bus topologies

CC-Link integration

Connectable with various products supporting CC-Link



Automotive paint shop (Safety system)

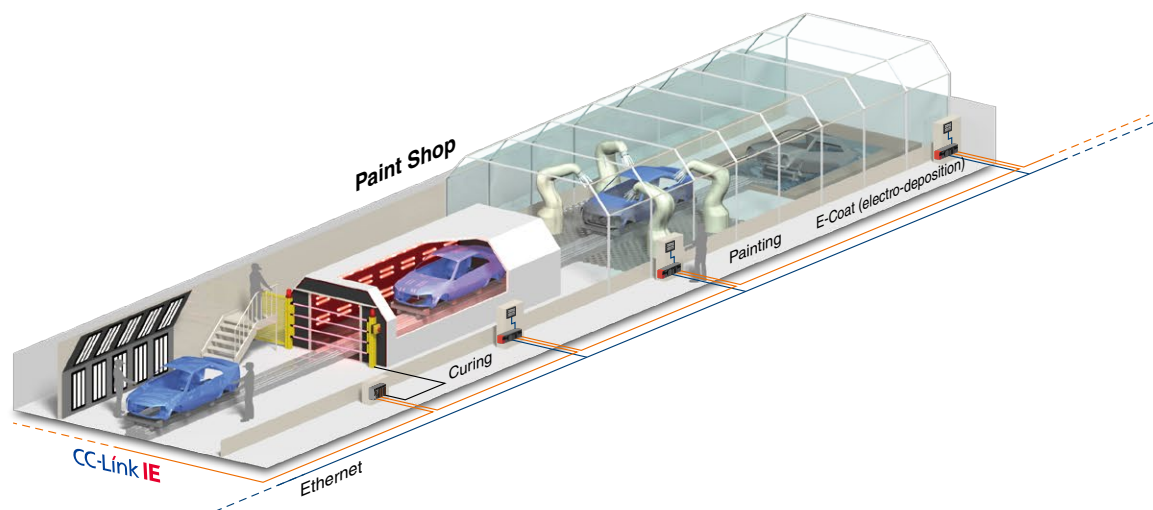
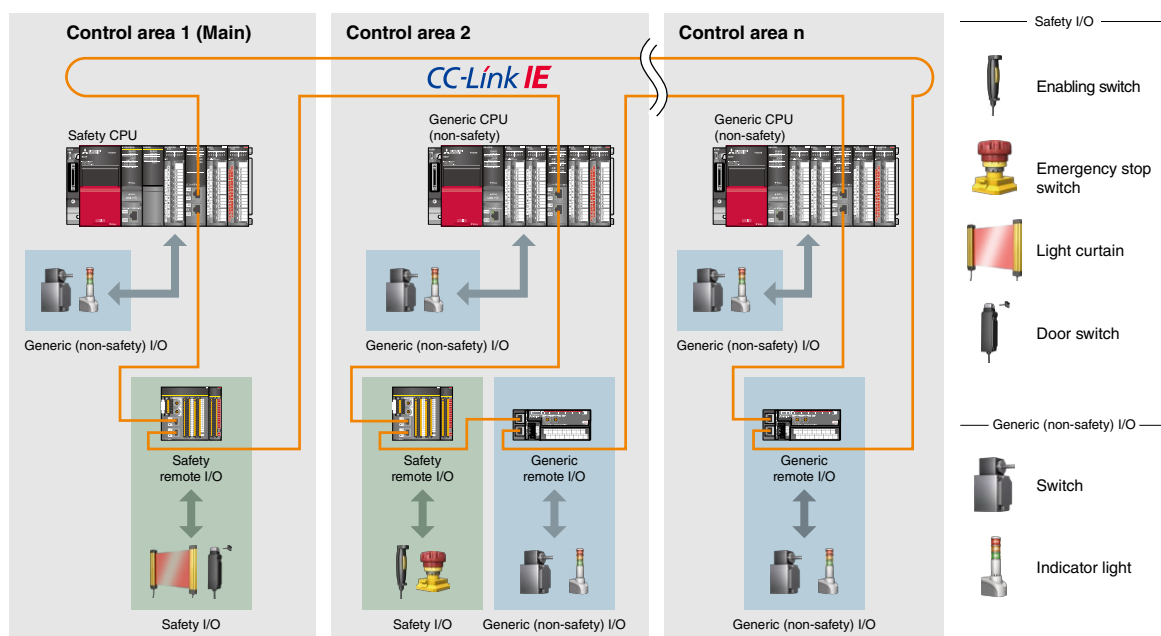


■ Safety communication between different processes

Safety control is coordinated between different processes

■ Integration of non-safety communications

Generic and safety control is performed on one network



Features

Applications

Products

Options

Development tool

Product list

Flat panel display (FPD) production process



■ Super high speed

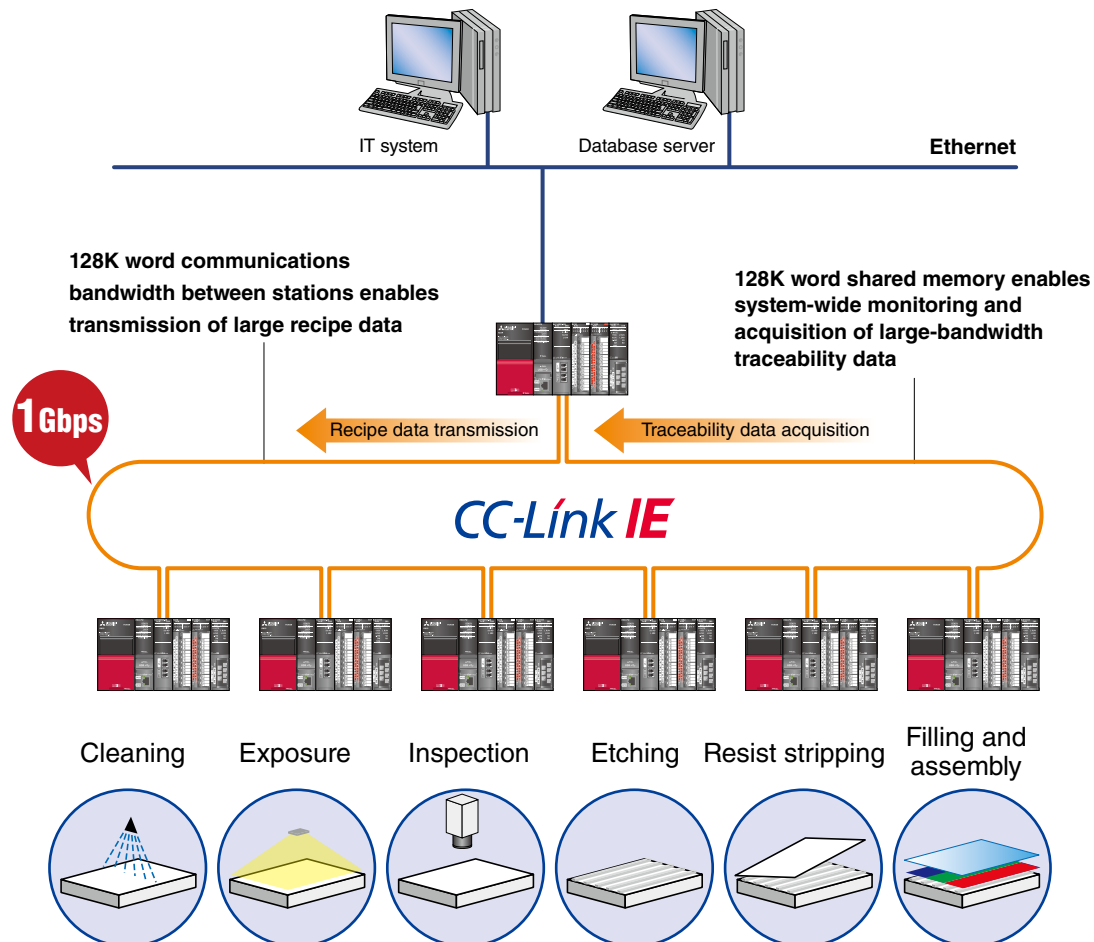
1 Gbps communication speed enables high-speed data transfer

■ Large capacity

Large volume of recipe and traceability data is transmitted together with cyclic communication

■ Cyclic communication

Cyclic communication bandwidth is fixed realizing deterministic control even when transient communications are varied



Steel production process



Large capacity

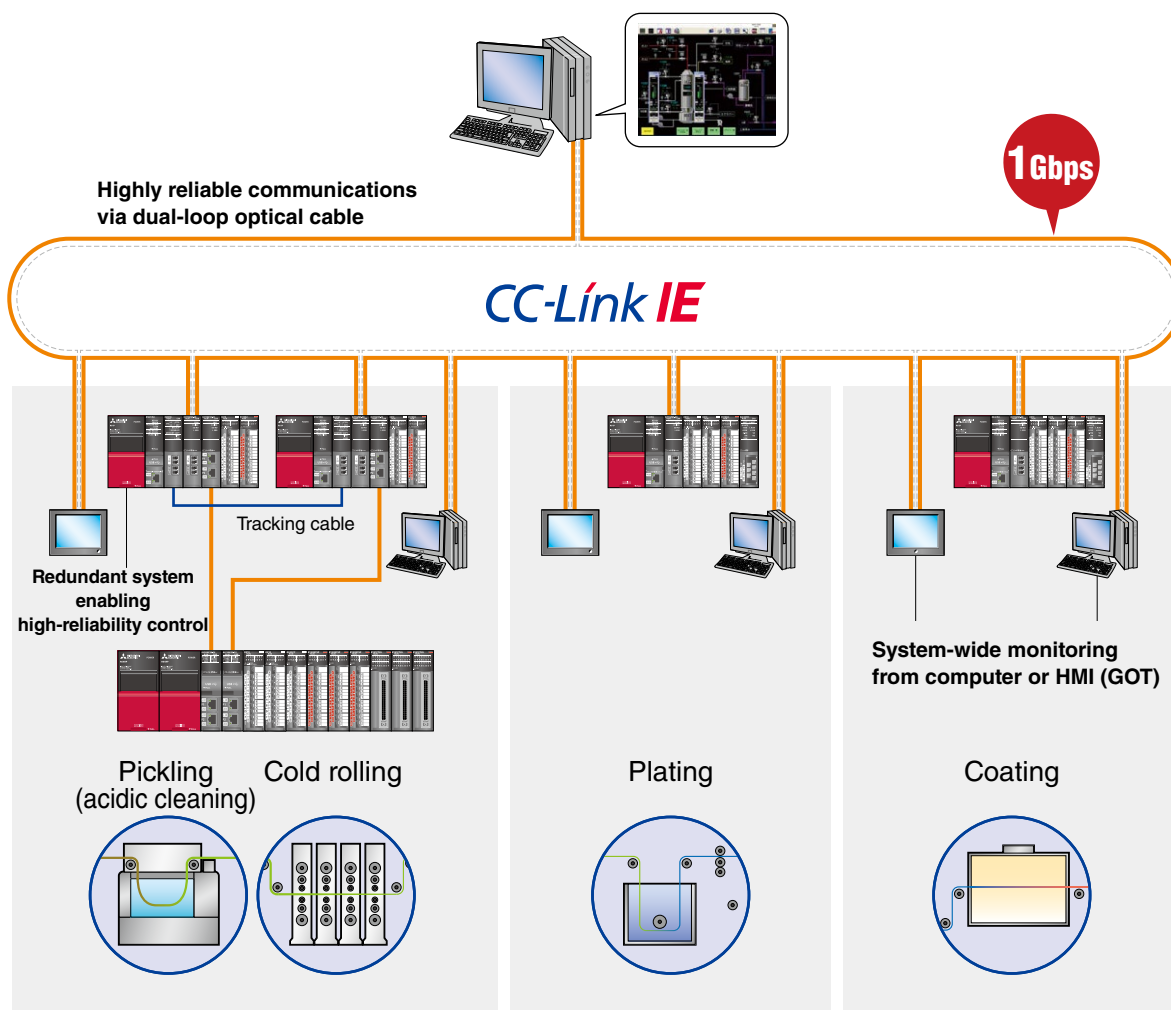
Large volume of recipe and traceability data is transmitted together with cyclic communication (1 Gbps)

Distributed control

Data is distributed between multiple controllers, realizing high traceability

Highly-reliable

Realize highly-reliable system using redundant CPUs, dual-loop optical network, and external power supply



Features

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Product list

CC-Link IE embedded CPU modules

R04ENCPU
R32ENCPU

R08ENCPU
R120ENCPU

R16ENCPU

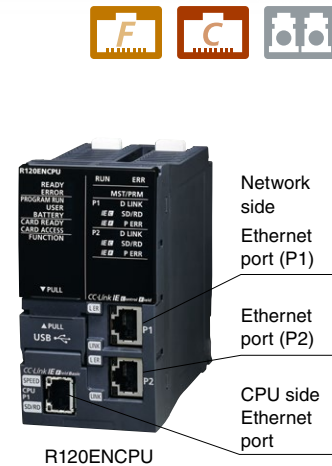
- CPU module with CC-Link IE embedded
- Dual Ethernet ports on the network side enable the module to operate as an Ethernet or CC-Link IE Field Network master/local station, or as a CC-Link IE Control Network control/normal station
- The Ethernet port on the CPU side is used as an Ethernet communications port
- Dual Ethernet ports on the network side can be used as a gateway

Network combination*1

P1	C	F	E	E
P2	C	F	C	F

C : CC-Link IE Control Network
F : CC-Link IE Field Network
E : Ethernet

*1. The CC-Link IE Field and CC-Link IE Control networks cannot be used together.



Multi-network supporting Ethernet module RJ71EN71*2

- Dual Ethernet ports enable the module to operate as an Ethernet or CC-Link IE Field Network master/local station, or a CC-Link IE Control Network control/normal station

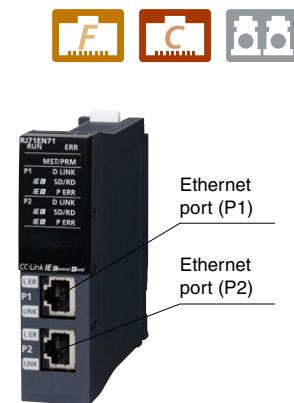
Network combination*3

P1	C	F	E	E	E
P2	C	F	C	F	E

C : CC-Link IE Control Network
F : CC-Link IE Field Network
E : Ethernet

*2. Safety communications is not supported.

*3. The CC-Link IE Field and CC-Link IE Control networks cannot be used together.



CC-Link IE Field Network master/local modules RJ71GF11-T2 QJ71GF11-T2 LJ71GF11-T2

- These modules can be used either as a CC-Link IE Field Network master or local station
- The station-based block data assurance feature ensures data integrity between stations (Output delay can be shortened by synchronization with END processing)
- In combination with a MELSEC iQ-R Series Safety CPU, RJ71GF11-T2 can be used as a safety master/local station



■ CC-Link IE Control Network modules

RJ71GP21-SX RJ71GP21S-SX
QJ71GP21-SX QJ71GP21S-SX



- These modules can be used either as a CC-Link IE Control Network control or normal station
- Enables connection of an external power supply (QJ71GP21S-SX), which ensures communication even if the controller power is lost
- The station-based block data assurance feature ensures data integrity between stations



RJ71GP21-SX RJ71GP21S-SX QJ71GP21-SX
 Module with external power supply I/P terminal

■ CC-Link IE Field Network simple motion modules

RD77GF4 RD77GF8 RD77GF16 RD77GF32
QD77GF4 QD77GF8 QD77GF16



- Perform control of high-speed I/O and motion in one network, and provide a suitable system layout with highly flexible wiring
- Perform advanced motion control such as synchronous, cam, and positioning control including trajectory control
- Can be used as a CC-Link IE Field Network master station*1

*1. RD77GF does not support the sub-master function.
 QD77GF does not support the local, sub-master, and safety communication functions.



RD77GF32 QD77GF16

■ CC-Link IE Field Network remote head module*2

RJ72GF15-T2



- A remote station can be realized through a combination of MELSEC iQ-R Series I/O and intelligent function modules used together with this module
- Through its flexibility in system design, a remote station can be created based on the application size
- Can access other stations on the network via USB port and perform parameter setting and monitoring, saving on system configuration time

*2. For details of applicable modules, please refer to the relevant product manual.



RJ72GF15-T2



Supports up to 64 MELSEC iQ-R Series I/O modules and intelligent function modules per station.

Features

Applications

Products

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Development tool

Product list

■ CC-Link IE Field Network head module*1 LJ72GF15-T2

- A remote station can be realized through a combination of MELSEC-L Series I/O and intelligent function modules used together with this module
- Through its flexibility in system design, a remote station can be created based on the application size
- Can access other stations on the network via USB port and perform parameter setting and monitoring, saving on system configuration time

*1. For details of applicable modules, please refer to the relevant product manual.



Supports up to 10 MELSEC-L Series I/O modules and intelligent function modules per station.

■ CC-Link IE Field Network intelligent device station module FX5-CCLIEF

- Enables connection of MELSEC iQ-F Series to CC-Link IE Field Network as an intelligent device station
- Connectable to high-speed and high-capacity CC-Link IE Field Network, which also supports distributed controls, realizing shorter operating cycle time and improved traceability
- Supports seamless communication, which enables setup and maintenance from any network-connected point including a computer and shop floor device



■ AC Servo MELSERVO-J4 Series

▶ CC-Link IE Field Network compatible servo amplifier MR-J4-GF(-RJ)



- CC-Link IE Field Network function embedded
- Combined with the Simple Motion module, the servo amplifier can perform synchronous and interpolation control, in addition to speed and torque control
- With a master module, the servo amplifier can perform positioning operations just as easy as I/O operations, by using the point table method (positioning operations are performed based on the point table No. and start signal, without using a positioning module)



Model*1	Voltage class	Rated output	Fully closed loop control	Compatible servo motor		
				Rotary	Linear	Direct drive
MR-J4-□GF	200 V	0.1...22 kW	●	●	●	●
MR-J4-□GF4	400 V	0.6...22 kW	●	●	●	-
MR-J4-□GF1	100 V	0.1...0.4 kW	●	●	●	●
MR-J4-□GF-RJ	200 V	0.1...22 kW	●	●	●	●
MR-J4-□GF4-RJ	400 V	0.6...22 kW	●	●	●	-
MR-J4-□GF1-RJ	100 V	0.1...0.4 kW	●	●	●	●

*1. "□" in the model name denotes rated output. For further details about model name, please refer to the "MELSERVO-J4 catalog (L(NA)03058ENG)".

■ Inverter FREQROL-A800 Series

▶ CC-Link IE Field Network compatible inverter FR-A800-GF



- CC-Link IE Field Network function embedded*2
- High-speed communication of CC-Link IE Field Network realizes various inverter operations to be monitored at a fast rate (multiple monitoring and parameter reading/writing can also be executed simultaneously improving maintainability)
- Seamless network environment enables monitoring and setup of inverters from the IT system



Model*3	Voltage class	Capacity	Structure/functionality
FR-A820-□K-GF	200 V	0.4...90 kW	Standard model
FR-A840-□K-GF	400 V	0.4...280 kW	Standard model
FR-A842-□K-GF	400 V	315...500 kW	Separated converter type

*2. The CC-Link IE Field Network communication option (FR-A8NCE) is also available (applicable models: FR-A800 and FR-F800 inverters). For details, please refer to the "Inverter option catalog (L(NA)06054ENG)".

*3. "□" in the model name denotes rated output. For further details about model name, please refer to the "FR-A800 catalog (L(NA)06075ENG)".

■ HMI GOT2000 Series

▶ CC-Link IE Field Network communication unit set GT27□□-□□□□-GF GT25□□-□□□□-GF



- This product-set includes a GOT2000 Series GOT (GT27 or GT25*¹) and a CC-Link IE Field Network communication unit*²
- Integrates the HMI (GOT) into a system as a CC-Link IE Field Network intelligent device station

*1. Excluding GT2505, GT2510-W, GT2507-W, GT2507T, GT2506HS, and GT2505HS.

*2. The CC-Link IE Field Network communication unit (GT15-J71GF13-T2) is also available separately (applicable models: GT27, GT25). For details, please refer to the "GOT 2000 Series catalog (L(NA)08270ENG)".



Model* ³	Screen size	Panel color	Power supply	Multi-touch gesture functions
GT27				
GT2715-XTBA-GF	15"XGA	Black	100...240 V AC	●
GT2715-XTBD-GF	15"XGA	Black	24 V DC	●
GT2712-ST□A-GF	12.1"SVGA	Black/white	100...240 V AC	●
GT2712-ST□D-GF	12.1"SVGA	Black/white	24 V DC	●
GT2710-STBA-GF	10.4"SVGA	Black	100...240 V AC	●
GT2710-STBD-GF	10.4"SVGA	Black	24 V DC	●
GT2710-VT□A-GF	10.4"VGA	Black/white	100...240 V AC	●
GT2710-VT□D-GF	10.4"VGA	Black/white	24 V DC	●
GT2708-STBA-GF	8.4"SVGA	Black	100...240 V AC	●
GT2708-STBD-GF	8.4"SVGA	Black	24 V DC	●
GT2708-VTBA-GF	8.4"VGA	Black	100...240 V AC	●
GT2708-VTBD-GF	8.4"VGA	Black	24 V DC	●
GT2705-VTBD-GF	5.7"VGA	Black	24 V DC	●
GT25				
GT2512-STBA-GF	12.1"SVGA	Black	100...240 V AC	-
GT2512-STBD-GF	12.1"SVGA	Black	24 V DC	-
GT2510-VT□A-GF	10.4"VGA	Black/white	100...240 V AC	-
GT2510-VT□D-GF	10.4"VGA	Black/white	24 V DC	-
GT2508-VT□A-GF	8.4"VGA	Black/white	100...240 V AC	-
GT2508-VT□D-GF	8.4"VGA	Black/white	24 V DC	-

*3. "□" in the model name denotes panel color (B (black)/W (white)). For further details about model name, please refer to the "GOT 2000 Series catalog (L(NA)08270ENG)".

▶ CC-Link IE Control Network communication unit GT15-J71GP23-SX



- HMI (GOT) communication unit for CC-Link IE Control Network
- Integrates a HMI (GOT) as a normal station of CC-Link IE Control Network

Supported by: GT27, GT25*⁴

*4. Excluding GT2505, GT2510-W, GT2507-W, GT2507T, GT2506HS, and GT2505HS.



■ CC-Link IE Field Network Block type remote modules



- These modules are useful when installation positions close to I/O devices are required
- Connectable to extension modules, which increases the number of I/O points
- Supports CC-Link IE Field Network synchronized communication (By synchronizing with the master station*¹*², which supports synchronized communication, these modules perform highly-accurate synchronous operations as slave stations.)
- Modules*³ supporting fast link-up function quickly return when reconnected with the CC-Link IE Field Network after disconnection
- Modules*³ supporting automatic I/O parameter setting can be operated without setting parameters, thereby reducing the start-up timing

*1. MELSEC iQ-R Series and simple motion module master stations support this feature.

*2. When using QD77GF16, this function cannot be used depending on the combination of the I/O module and software package used. For further details, please refer to the block type remote module manual.

*3. For applicable modules, please refer to function list on P.29.

Main input modules

- Response time can be set at 0 ms, 0.2 ms, 1 ms, 1.5 ms, 5 ms, 10 ms, 20 ms and 70 ms
- High-speed I/O control is realized with the Fast logic function through a combination of an extension output module

Spring clamp terminal block type

NZ2GF2S1-16D



Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Max. extension modules
NZ2GF2S1-16D	Positive common, Negative common	16 points	24 V DC (6 mA)	1-wire	1

NZ2GF2S2-16A

Model	Input type	Input points	Rated input voltage, frequency	Rated input current	Wiring type	Max. extension modules
NZ2GF2S2-16A	AC input	16 points	100...120 V AC, 50/60 Hz	8.2 mA (100 V AC, 60 Hz), 6.8 mA (100 V AC, 50 Hz)	2-wire	1

Screw terminal block

NZ2GF2B1N1-16D NZ2GF2B1-32D



Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Max. extension modules
NZ2GF2B1N1-16D	Positive common, Negative common	16 points	24 V DC (6 mA)	1-wire	3
NZ2GF2B1-32D	Positive common, Negative common	32 points	24 V DC (6 mA)	1-wire	-

NZ2GF2B2-16A

Model	Input type	Input points	Rated input voltage, frequency	Rated input current	Wiring type	Max. extension modules
NZ2GF2B2-16A	AC input	16 points	100...120 V AC, 50/60 Hz	8.2 mA (100 V AC, 60 Hz), 6.8 mA (100 V AC, 50 Hz)	2-wire	1

Sensor connector (e-CON) type

NZ2GFCE3-16D NZ2GFCE3-16DE NZ2GFCE3N-32D



NZ2GFCE3N-32D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Max. extension modules
NZ2GFCE3-16D	Positive common	16 points	24 V DC (4 mA)	3-wire	1
NZ2GFCE3-16DE	Negative common	16 points	24 V DC (4 mA)	3-wire	1
NZ2GFCE3N-32D	Positive common	32 points	24 V DC (4 mA)	3-wire	1

MIL connector type

NZ2GFCM1-16D NZ2GFCM1-16DE



NZ2GFCM1-16D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Max. extension modules
NZ2GFCM1-16D	Positive common	16 points	24 V DC (4 mA)	1-wire	1
NZ2GFCM1-16DE	Negative common	16 points	24 V DC (4 mA)	1-wire	1

40-pin connector type

NZ2GFCF1-32D



NZ2GFCF1-32D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Max. extension modules
NZ2GFCF1-32D	Positive common, Negative common	32 points	24 V DC (4 mA)	1-wire	1

Main output modules

- Cumulative contact ON times of a module can be easily confirmed with the ON times integration function
- High-speed I/O control is realized with the Fast logic function through a combination of an extension input module

Spring clamp terminal block type

NZ2GF2S1-16T NZ2GF2S1-16TE



NZ2GF2S1-16T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GF2S1-16T	Sink type	16 points	12/24 V DC (0.5 A)	1-wire	1
NZ2GF2S1-16TE	Source type	16 points	12/24 V DC (0.5 A)	1-wire	1

NZ2GF2S2-16R

Model	Output type	Output points	Rated switching voltage/current	Wiring type	Max. extension modules
NZ2GF2S2-16R	Contact output	16 points	24 V DC (2 A), 240 V AC (2 A)	2-wire	1

NZ2GF2S2-16S

Model	Output type	Output points	Rated load voltage, frequency/ Max. load current	Wiring type	Max. extension modules
NZ2GF2S2-16S	Triac output	16 points	100...240 V AC, 50/60 Hz (0.6 A)	2-wire	1

Screw terminal block

NZ2GF2B1N1-16T
NZ2GF2B1N1-16TE

NZ2GF2B1-32T
NZ2GF2B1-32TE



NZ2GF2B1-32T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GF2B1N1-16T	Sink type	16 points	12/24 V DC (0.5 A)	1-wire	3
NZ2GF2B1N1-16TE	Source type	16 points	12/24 V DC (0.5 A)	1-wire	3
NZ2GF2B1-32T	Sink type	32 points	12/24 V DC (0.5 A)	1-wire	-
NZ2GF2B1-32TE	Source type	32 points	12/24 V DC (0.5 A)	1-wire	-

NZ2GF2B2-16R

Model	Output type	Output points	Rated switching voltage/current	Wiring type	Max. extension modules
NZ2GF2B2-16R	Contact output	16 points	24 V DC (2 A), 240 V AC (2 A)	2-wire	1

NZ2GF2B2-16S

Model	Output type	Output points	Rated load voltage, frequency/ Max. load current	Wiring type	Max. extension modules
NZ2GF2B2-16S	Triac output	16 points	100...240 V AC, 50/60 Hz (0.6 A)	2-wire	1

Sensor connector (e-CON) type

NZ2GFCE3-16T
NZ2GFCE3-16TE
NZ2GFCE3N-32T



NZ2GFCE3N-32T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GFCE3-16T	Sink type	16 points	12/24 V DC (0.5 A)	3-wire	1
NZ2GFCE3-16TE	Source type	16 points	12/24 V DC (0.5 A)	3-wire	1
NZ2GFCE3N-32T	Sink type	32 points	12/24 V DC (0.5 A)	3-wire	1

MIL connector type

NZ2GFCM1-16T
NZ2GFCM1-16TE



NZ2GFCM1-16T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GFCM1-16T	Sink type	16 points	12/24 V DC (0.5 A)	1-wire	1
NZ2GFCM1-16TE	Source type	16 points	12/24 V DC (0.5 A)	1-wire	1

40-pin connector type

NZ2GFCF1-32T



NZ2GFCF1-32T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GFCF1-32T	Sink type	32 points	12/24 V DC (0.1 A)	1-wire	1

Main I/O combined modules

- The I/O combined module controls both inputs and outputs all in one module
- Response time can be set at 0 ms, 0.2 ms, 1 ms, 1.5 ms, 5 ms, 10 ms, 20 ms and 70 ms
- Cumulative contact ON times of a module can be easily confirmed with the ON times integration function
- High-speed I/O control is realized with the Fast logic function

Screw terminal block

NZ2GF2B1-32DT NZ2GF2B1-32DTE



NZ2GF2B1-32DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GF2B1-32DT	Positive common	16 points	24 V DC (6 mA)	Sink type	16 points	24 V DC (0.5 A)	1-wire	-
NZ2GF2B1-32DTE	Negative common	16 points	24 V DC (6 mA)	Source type	16 points	24 V DC (0.5 A)	1-wire	-

Sensor connector (e-CON) type

NZ2GFCE3N-32DT



NZ2GFCE3N-32DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GFCE3N-32DT	Positive common	16 points	24 V DC (4 mA)	Sink type	16 points	24 V DC (0.5 A)	3-wire	1

40-pin connector type

NZ2GFCF1-32DT



NZ2GFCF1-32DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Max. extension modules
NZ2GFCF1-32DT	Positive common, Negative common	16 points	24 V DC (4 mA)	Sink type	16 points	12/24 V DC (0.1 A)	1-wire	1

CC-Link IE Field Network Block type remote modules function list*1

Type	Model	Synchronized communication	Data backup/restoration	Fast link-up	I/O parameter automatic setting	Fast logic
DC input	NZ2GF2S1-16D	●	-	-	-	●*2
	NZ2GF2B1N1-16D	●	●	●	●	●*2
	NZ2GF2B1-32D	●	●	●	●	-
	NZ2GFCE3-16D	●	●	-	-	●*2
	NZ2GFCE3-16DE	●	●	-	-	●*2
	NZ2GFCE3N-32D	●	●	●	●	●*2
	NZ2GFCM1-16D	●	●	-	-	●*2
	NZ2GFCM1-16DE	●	●	-	-	●*2
AC input	NZ2GFCF1-32D	●	●	-	●	●*2
	NZ2GF2S2-16A	●	●	●	●	●*2
Transistor output	NZ2GF2B2-16A	●	●	●	●	●*2
	NZ2GF2S1-16T	●	-	-	-	●*2
	NZ2GF2S1-16TE	●	-	-	-	●*2
	NZ2GF2B1N1-16T	●	●	●	●	●*2
	NZ2GF2B1N1-16TE	●	●	●	●	●*2
	NZ2GF2B1-32T	●	●	●	●	-
	NZ2GF2B1-32TE	●	●	●	●	-
	NZ2GFCE3-16T	●	●	-	-	●*2
	NZ2GFCE3-16TE	●	●	-	-	●*2
	NZ2GFCE3N-32T	●	●	●	●	●*2
	NZ2GFCM1-16T	●	●	-	-	●*2
	NZ2GFCM1-16TE	●	●	-	-	●*2
Contact output	NZ2GFCF1-32T	●	●	-	●	●*2
	NZ2GF2S2-16R	●	●	●	●	●*2
Triac output	NZ2GF2B2-16R	●	●	●	●	●*2
	NZ2GF2S2-16S	●	●	●	●	●*2
I/O combined	NZ2GF2B2-16S	●	●	●	●	●*2
	NZ2GF2B1-32DT	●	●	●	●	●
	NZ2GF2B1-32DTE	●	●	●	●	●
	NZ2GFCE3N-32DT	●	●	●	●	●
	NZ2GFCF1-32DT	●	●	-	●	●

*1. For more information about modules and functions not stated in this list, please refer to the relevant module page.

*2. Available if the main module and the extension module are used together, one must be an input module and the other must be an output module.

Multiple input (voltage/current/temperature) module

- Galvanic channel isolation and conversion speed is 40 ms/4 channels
- Spring clamp terminal block does not require screw tightening, reducing wiring tasks
- Supports variety of temperature sensors (12 types of thermocouple, 10 types of RDT)

Spring clamp terminal block type

NZ2GF2S-60MD4



NZ2GF2S-60MD4

Model	Input type	Number of channels	Max. extension modules	Synchronized communication
NZ2GF2S-60MD4	Analog voltage/current/temperature input	4 ch	-	-

Analog input modules

- The conversion speed of the analog input module is selectable from 100 μ s/channel, 400 μ s/channel, and 1ms/channel*¹
- By combining with an extension module, precise control of the A/D conversion timing can be realized (Trigger Conversion Function)*²

*1. Conversion speed of NZ2GFCE-60ADV8 and NZ2GFCE-60ADI8 is 1ms/channel only.

*2. NZ2GFCE-60ADV8 and NZ2GFCE-60ADI8 do not support trigger conversion function.

Screw terminal block

NZ2GF2BN-60AD4



NZ2GF2BN-60AD4

Model	Input type	Number of channels	Max. extension modules	Synchronized communication
NZ2GF2BN-60AD4	Analog voltage/current input	4 ch	1	●

Sensor connector (e-CON) type

NZ2GFCE-60ADV8 NZ2GFCE-60ADI8



NZ2GFCE-60ADV8

Model	Input type	Number of channels	Max. extension modules	Synchronized communication
NZ2GFCE-60ADV8	Analog voltage input	8 ch	-	-
NZ2GFCE-60ADI8	Analog current input	8 ch	-	-

Analog output modules

- The conversion speed of NZ2GF2BN-60DA4 is 100 μ s/channel, and NZ2GFCE-60DAV8 and NZ2GFCE-60DAI8 is 1ms/channel.

Screw terminal block

NZ2GF2BN-60DA4



NZ2GF2BN-60DA4

Model	Output type	Number of channels	Max. extension modules	Synchronized communication
NZ2GF2BN-60DA4	Analog voltage/current output	4 ch	1	●

Sensor connector (e-CON) type

NZ2GFCE-60DAV8 NZ2GFCE-60DAI8



NZ2GFCE-60DAV8

Model	Output type	Number of channels	Max. extension modules	Synchronized communication
NZ2GFCE-60DAV8	Analog voltage output	8 ch	-	-
NZ2GFCE-60DAI8	Analog current output	8 ch	-	-

Temperature control modules

- Operates at a sampling cycle of 250 ms/4 channels, with standard control (heating or cooling) or mixed-mode (heating and cooling combined) supported
- The Simultaneous temperature rise, Peak current suppression, and Self-tuning functions included
- Input channel-isolation

Screw terminal block

NZ2GF2B-60TCTT4 NZ2GF2B-60TCRT4



NZ2GF2B-60TCTT4

Model	Input type	Output type Transistor output	Number of channels	Max. extension modules	Synchronized communication
NZ2GF2B-60TCTT4	Thermocouple input	Sink type	4 ch	-	-
NZ2GF2B-60TCRT4	RTD input	Sink type	4 ch	-	-

High-speed counter module

- Counting speed of 8 Mpps max (Duty ratio of the PWM output function can be set in 0.1 μ s units enabling precise output control)
- The pulse measurement function with 100 ns measurement resolution enables highly-accurate pulse width measurement

40-pin connector type

NZ2GFCF-D62PD2



NZ2GFCF-D62PD2

Model	Input type	Output type Transistor output	Number of channels	Max. extension modules	Synchronized communication
NZ2GFCF-D62PD2	Differential input, DC input	Sink type	2 ch	1	●



Extension modules

► Input/output modules

- Increases the number of available I/O points for the remote I/O, analog I/O, and high-speed counter modules
- (Combined with) an analog input module the extension module receives external signals for A-D conversion sampling timing control (sampling trigger adjustment)
- (Combined with) a high-speed counter module the extension module enables the Cam switch function to provide ON/OFF control at an accurate cycle
- When a main input module, main output module or I/O combined module supporting CC-Link IE Field Network synchronous communication function is connected, synchronous communication function can be used
- When an extension output module is connected to a main input module, main output module or I/O combined module, ON times integration function can be used

Spring clamp terminal block type

NZ2EX2S1-16D NZ2EX2S1-16T NZ2EX2S1-16TE



NZ2EX2S1-16D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Multiple modules connectable
NZ2EX2S1-16D	Positive common, Negative common	16 points	24 V DC (6 mA)	1-wire	-

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Multiple modules connectable
NZ2EX2S1-16T	Sink type	16 points	12/24 V DC (0.5 A)	1-wire	-
NZ2EX2S1-16TE	Source type	16 points	12/24 V DC (0.5 A)	1-wire	-

Screw terminal block

NZ2EX2B1N-16D NZ2EX2B1N-16T NZ2EX2B1N-16TE



NZ2EX2B1N-16D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Multiple modules connectable
NZ2EX2B1N-16D	Positive common, Negative common	16 points	24 V DC (6 mA)	1-wire	●

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Multiple modules connectable
NZ2EX2B1N-16T	Sink type	16 points	12/24 V DC (0.5 A)	1-wire	●
NZ2EX2B1N-16TE	Source type	16 points	12/24 V DC (0.5 A)	1-wire	●

► Analog input/output modules

- Extends the number of analog points without any changes required to the network configuration
- Conversion speed can be selected from 100 μ s/channel, 400 μ s/channel, and 1 ms/channel for the analog input module (Conversion speed switch function)
- Conversion speed is 100 μ s/channel for analog output module
- Enables connection with analog I/O modules

Screw terminal block

NZ2EX2B-60AD4 NZ2EX2B-60DA4



NZ2EX2B-60AD4

Model	Input/Output type	Number of channels	Multiple modules connectable
NZ2EX2B-60AD4	Analog voltage/current input	4 ch	-
NZ2EX2B-60DA4	Analog voltage/current output	4 ch	-

■ CC-Link IE Field Network

Waterproof/dustproof type (IP67) remote modules*1



- Complies with IP 67 rating. A control cabinet is no longer necessary, saving on hardware cost and space
- Push-to-lock connector reduces wiring tasks and eliminates maintenance such as retightening of screws*2

*1. General specifications and product guarantee conditions for co-branded products may vary from those of general MELSEC products. For more information, please refer to the relevant product manuals or contact your local Mitsubishi Electric sales office/representative.

*2. Screw type connector is also supported.



NZ2GF12A42-16DT

Input modules

- Response time can be set at 0 ms, 0.5 ms, 1 ms, 1.5 ms, 5 ms, 10 ms, 20 ms and 70 ms

Waterproof connector

NZ2GF12A4-16D NZ2GF12A4-16DE

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type
NZ2GF12A4-16D	Positive common	16 points	24 V DC (7 mA)	2...4-wire
NZ2GF12A4-16DE	Negative common	16 points	24 V DC (7 mA)	2...4-wire

Output modules

- Cumulative contact ON times of a module can be easily confirmed with the ON times integration function

Waterproof connector

NZ2GF12A2-16T NZ2GF12A2-16TE

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2GF12A2-16T	Sink type	16 points	12/24 V DC (2 A)	2-wire
NZ2GF12A2-16TE	Source type	16 points	12/24 V DC (2 A)	2-wire

I/O combined modules

- The I/O combined module controls both inputs and outputs all in one module
- Response time can be set at 0 ms, 0.5 ms, 1 ms, 1.5 ms, 5 ms, 10 ms, 20 ms and 70 ms
- High-speed I/O control is realized with the Fast logic function

Waterproof connector

NZ2GF12A42-16DT NZ2GF12A42-16DTE

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2GF12A42-16DT	Positive common	8 points	24 V DC (7 mA)	Sink type	8 points	12/24 V DC (2 A)	2...4-wire, 2-wire
NZ2GF12A42-16DTE	Negative common	8 points	24 V DC (7 mA)	Source type	8 points	12/24 V DC (2 A)	2...4-wire, 2-wire



■ CC-Link IE Field Network safety remote I/O modules



- Remote I/O modules that support safety functions of CC-Link IE Field Network
- Performs safety control when used together with the MELSEC iQ-R Series Safety CPU

Main safety input module

- Input module with safety functions

Spring clamp terminal block type

NZ2GFSS2-8D



NZ2GFSS2-8D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Extension module compatibility
NZ2GFSS2-8D	Negative common	Single wiring: 8 points Double wiring: 4 points	24 V DC (7 mA)	2-wire	●



NZ2GFSS2-32D

NZ2GFSS2-32D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type	Extension module compatibility
NZ2GFSS2-32D	Negative common	Single wiring: 32 points Double wiring: 16 points	24 V DC (6 mA)	2-wire	●

Main safety output module

- Output module with safety functions

Spring clamp terminal block type

NZ2GFSS2-8TE



NZ2GFSS2-8TE

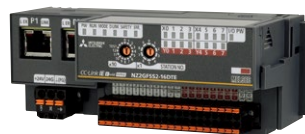
Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Extension module compatibility
NZ2GFSS2-8TE	Source + source type	Single wiring: 8 points Double wiring: 4 points	24 V DC (0.5 A)	2-wire	●

Main safety I/O module

- I/O module with safety functions

Spring clamp terminal block type

NZ2GFSS2-16DTE



NZ2GFSS2-16DTE

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type	Extension module compatibility
NZ2GFSS2-16DTE	Negative common	Single wiring: 8 points Double wiring: 4 points	24 V DC (7 mA)	Source + source type	Single wiring: 8 points Double wiring: 4 points	24 V DC (0.5 A)	2-wire	●

Extension safety output module

- Extension output module with safety functions
- Increases output points when combined with the main safety input module
- Provides 4 safety output points (with double wiring)

Spring clamp terminal block type

NZ2EXSS2-8TE



NZ2EXSS2-8TE

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2EXSS2-8TE	Source + source type	Single wiring: 8 points Double wiring: 4 points	24 V DC (0.5 A)	2-wire

Waterproof/dustproof type (IP67) safety I/O modules

- I/O module with safety functions
- Complies with IP 67 rating. A control cabinet is no longer necessary, saving on hardware cost and space
- Push-to-lock connector reduces wiring tasks and eliminates maintenance such as retightening of screws^{*1}

^{*1}. Screw connector is also supported.

Waterproof connector

NZ2GFS12A2-14DT **NEW**

NZ2GFS12A2-16DTE **NEW**



NZ2GFS12A2-14DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2GFS12A2-14DT	Negative common	Single wiring: 12 points Double wiring: 6 points	24V DC (6 mA)	Source + sink type	Single wiring: not possible Double wiring: 2 points	24V DC (2.0 A)	2-wire
NZ2GFS12A2-16DTE	Negative common	Single wiring: 12 points Double wiring: 6 points	24V DC (6 mA)	Source + source type	Single wiring: 4 points Double wiring: 2 points	24V DC (1.0 A)	2-wire



■ CC-Link IE Field Network remote IO-Link modules



- Support CC-Link IE Field Network
- Control IO-Link standard devices as the IO-Link master module
- The waterproof connector does not require a control cabinet, saving on hardware cost and space

Spring clamp terminal block type

NZ2GF2S-60IOLD8



NZ2GF2S-60IOLD8

Model	Number of IO-Link channels	Rated load voltage/ Rated load current (L+)*1	Transmission speed*2	IO-Link compatible protocol	Waterproof (IP67)
NZ2GF2S-60IOLD8	8 ch	24 V DC (1.6 A)	4.8 kbaud (COM1) 38.4 kbaud (COM2) 230.4 kbaud (COM3)	V1.1.2	-

Waterproof connector

NZ2GF12A-60IOLH8



NZ2GF12A-60IOLH8

Model	Number of IO-Link channels	Rated load voltage/ Max. load current (L+)*1	Transmission speed*2	IO-Link compatible protocol	Waterproof (IP67)
NZ2GF12A-60IOLH8	8 ch	24 V DC (1.3 A)	4.8 kbaud (COM1) 38.4 kbaud (COM2) 230.4 kbaud (COM3)	V1.1.2	●

*1. Power supply line to IO-Link device.

*2. Transmission speed differs according to the connected IO-Link device.

■ Network interface boards

► CC-Link IE Field Network interface board

PCI Express® bus type

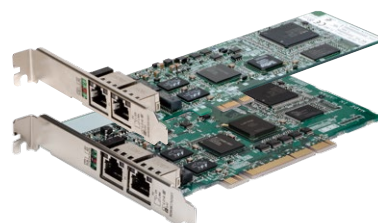
Q81BD-J71GF11-T2

PCI/PCI-X bus type

Q80BD-J71GF11-T2

- These interface boards connect computers or controllers supporting PCI Express®/PCI/PCI-X interface to CC-Link IE Field Network
- Can be used as either a CC-Link IE Field Network master or local station*1

*1. The sub-master function and motion function are not supported.



► CC-Link IE Control Network interface board

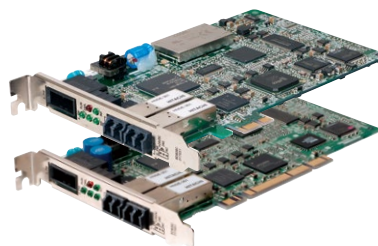
PCI Express® bus type

Q81BD-J71GP21-SX Q81BD-J71GP21S-SX

PCI/PCI-X bus type

Q80BD-J71GP21-SX Q80BD-J71GP21S-SX

- These interface boards connect computers or controllers supporting PCI Express®/PCI/PCI-X interface to CC-Link IE Control Network
- Can be used as either a CC-Link IE Control Network master or local station
- An interface board including external power supply input terminals maintains communication in the event that the computer loses power



Q81BD-J71GP21S-SX/
Q80BD-J71GP21S-SX
External power supply I/P terminal type

► CC-Link IE Field Network simple motion board

PCI Express® bus type

MR-EM340GF

- Performs control of high-speed I/O and motion in one network, and provides a suitable system layout with highly flexible wiring
- Can be used as a CC-Link IE Field Network master station*2
- Combined with a computer, the board performs advanced motion control such as positioning, synchronous, and cam control with C++ programming (event-driven programs with interrupts are also supported)

*2. The local, sub-master, and safety communication functions are not supported.



Features

Applications

Products

Options

Development tool

Product list



CC-Link IE Field Network (CC-Link IE F2S) Specifications

Network interface board operation environment

Item	Q81BD-J71GF11-T2	Q80BD-J71GF11-T2	Q81BD-J71GP21-SX/ Q81BD-J71GP21S-SX	Q80BD-J71GP21-SX/ Q80BD-J71GP21S-SX	MR-EM340GF
Personal computer	Windows® supported personal computer				
CPU	System requirements of the operating system must be met				
Required memory					
Installation slot	PCI Express® x1, x4, x8, x16 slot (Standard/low profile, half size)	PCI bus slot or PCI-X slot (Half size)	PCI Express® x1, x2, x4, x8, x16 slot (Half size)	PCI bus slot or PCI-X slot (Half size)	PCI Express® x1, x2, x4, x8, x16 slot (Half size)
Bus specifications*1	Compliant with PCI Express® standard Rev.1.1	Compliant with PCI standard Rev.2.2	Compliant with PCI Express® standard Rev.1.1	Compliant with PCI standard Rev.2.2	Compliant with PCI Express® standard Rev.2.0
Operating system (English Version)*2					
Microsoft® Windows Server® 2008 Standard	●*3		●		—
Microsoft® Windows Server® 2008 Enterprise	●*3		●		—
Microsoft® Windows Server® 2008 Standard x64 Edition	●*3		●		—
Microsoft® Windows Server® 2008 Enterprise x64 Edition	●*3		●		—
Microsoft® Windows Server® 2008 R2 Standard	●		●		—
Microsoft® Windows Server® 2008 R2 Enterprise	●		●		—
Microsoft® Windows® 7 Home Premium	●		●		—
Microsoft® Windows® 7 Professional	●		●		●
Microsoft® Windows® 7 Ultimate	●		●		●
Microsoft® Windows® 7 Enterprise	●		●		●
Microsoft® Windows Server® 2012 Standard	●		●		—
Microsoft® Windows Server® 2012 R2 Standard	●		●		—
Microsoft® Windows® 8.1	●		●		—
Microsoft® Windows® 8.1 Pro	●		●		●
Microsoft® Windows® 8.1 Enterprise	●		●		●
Microsoft® Windows® 10 Home	●		●		—
Microsoft® Windows® 10 Pro	●		●		●
Microsoft® Windows® 10 Enterprise	●		●		●
Microsoft® Windows® 10 Education	●		●		—
Programming language (English Version)*2					
Microsoft® Visual Studio® 2010 Visual Basic®	●		●		—
Microsoft® Visual Studio® 2012 Visual Basic®	●		●		—
Microsoft® Visual Studio® 2013 Visual Basic®	●		●		—
Microsoft® Visual Studio® 2015 Visual Basic®	●		●		—
Microsoft® Visual Studio® 2010 Visual C++®	●		●		●
Microsoft® Visual Studio® 2012 Visual C++®	●		●		●
Microsoft® Visual Studio® 2013 Visual C++®	●		●		●
Microsoft® Visual Studio® 2015 Visual C++®	●		●		●

*1. For the details on bus specifications, please refer to the relevant product manual.

*2. For a combination of the operation system and the programming language, please refer to Microsoft Docs to check the system requirement of Visual Studio®.

*3. Service Pack 2 or later.

For any other details on the operating environment, please refer to the relevant product manual.

■ CC-Link IE Field Network Ethernet adapter module NZ2GF-ETB

- Connects Seamless Message Protocol (SLMP) compatible Ethernet devices to CC-Link IE Field Network (enables a wide range of devices, such as vision sensors and RFID, to be connected to the network)
- Setting of station number, Ethernet options, and confirming error history is done using a web browser
- Supports 100 Mbps/1 Gbps transmission rates



■ CC-Link IE Field Network CC-Link bridge module NZ2GF-CCB

- Connects CC-Link Version 1 Remote I/O stations and Remote device stations to CC-Link IE Field Network
- Enables CC-Link parameters to be set with simple switch operations
- Link devices assigned to this bridge module are assigned as the CC-Link remote station's link devices in the same station order



CC-Link

■ CC-Link IE Field Network - AnyWireASLINK bridge module NZ2AW1GFAL

- Seamlessly connects AnyWireASLINK products to CC-Link IE Field Network
- Supports max. wiring distance of 200 m with AnyWireASLINK, realizing flexible wiring topology
- Supports iQSS (iQ Sensor Solution), which enables parameter setup and monitoring of slave devices connected to AnyWireASLINK



AnyWireASLINK

Features

Applications

Products

Options

Development tool

Product list



CC-Link IE Field Network Basic

With recent trends of IoT^{*1}, network connection of devices and equipment for small-scale systems are becoming more mainstream. CC-Link IE Field Network Basic realizes easier network integration, as its cyclic communications stack is software-based, without requiring a dedicated ASIC helping to reduce implementation costs for device partners.

Mitsubishi Electric is launching CC-Link IE Field Network Basic compatible products to further leverage networking on the production floor.

Plant-wide seamless communication

Utilizing standard Ethernet technology, TCP/IP protocol stack for communications (such as HTTP, FTP) is supported. Based on SLMP^{*2}, data flows transparently between the sensor level and the enterprise level across multiple industry-standard automation networks.

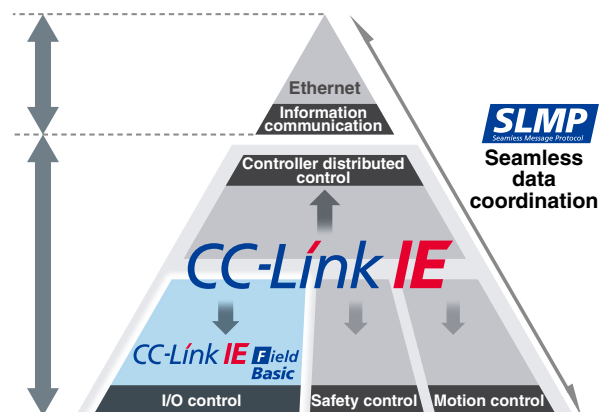
Seamless communication can be easily realized with CC-Link IE Field Network Basic, further improving performance of the manufacturing enterprise.

Positioning within CC-Link IE Network

The Ethernet-based open network CC-Link IE is a high-speed and large-capacity network integrating distributed control, I/O control, safety control, and motion control.

CC-Link IE Field Network Basic, which is a part of CC-Link IE Network, realizes easier network connection of Ethernet devices.

Transparent communications are achieved by utilizing SLMP^{*2} that enables seamless connectivity within all levels of manufacturing.



^{*1}. Internet of Things

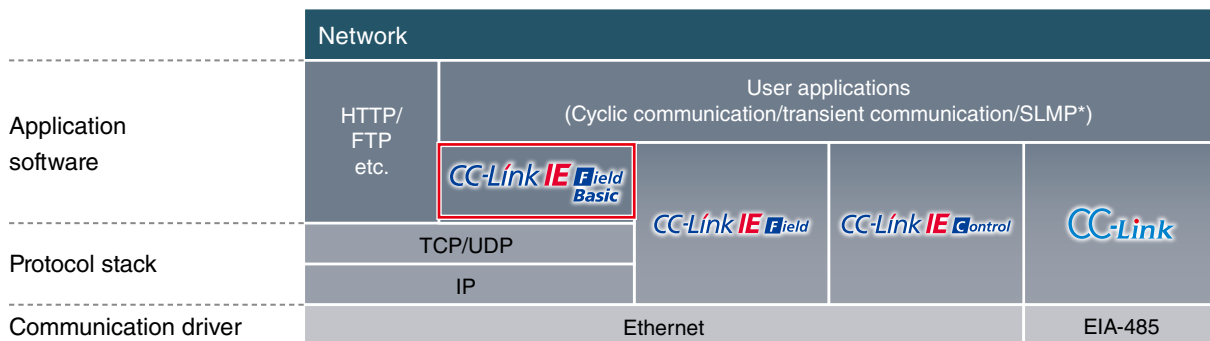
^{*2}. Seamless Message Protocol

Combining with TCP/IP communications

- Configure more flexible system
- Setup/monitor from enterprise level computer or tablet computer

■ Highly flexible system can be configured combining with TCP/IP communications

The network operates on the standard Ethernet protocol stack, which can be used together with TCP/IP communications. This feature allows CC-Link IE Field Network Basic compatible products and Ethernet compatible products to be connected on the same Ethernet communications line, enabling a highly-flexible and low cost system. By enabling cyclic communication control on standard Ethernet, parameter setting and status monitoring can be done with peripheral devices (such as an enterprise level or tablet computer) connected via TCP/IP communications.



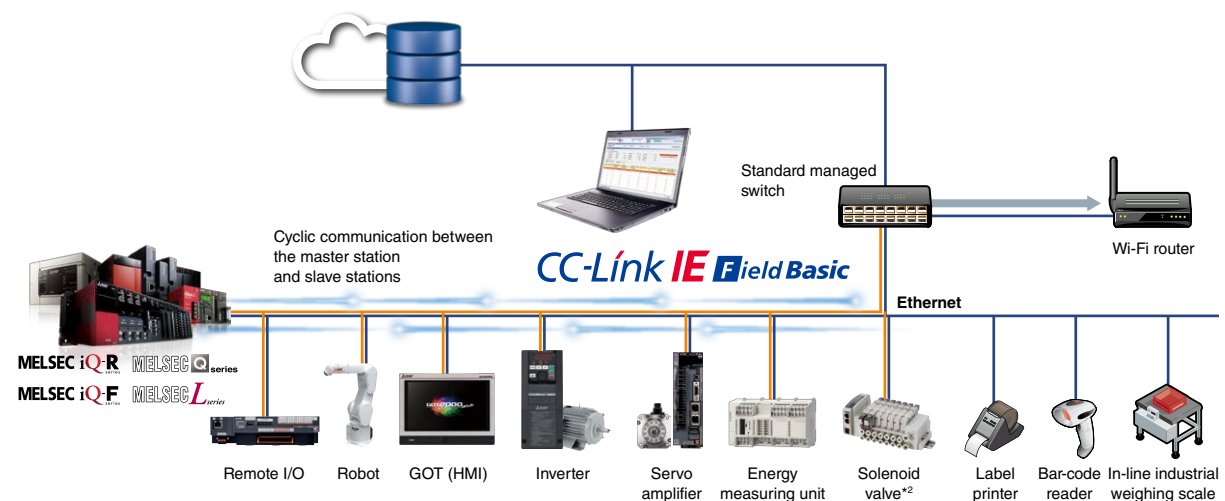
* SLMP: Seamless Message Protocol

Wider range of connectable products

- Connect third-party partner products on the same network

■ A wider range of CC-Link IE Field Network Basic-supported devices*¹

CC-Link IE Field Network Basic realizes cyclic communication with software implementation only. System can be easily configured using a standard managed switch and cables at a lower cost. Supported-products can be easily developed and a wider range of CC-Link IE Field Network Basic-supported devices can be readily available.



*1. Please refer to P.44 for compatible products.

*2. For further details regarding this product, please directly contact 'CKD Corporation', details can be found on their website at <http://www.ckd.co.jp/english/glbinfo/global/>

Note: Some images are for illustrative purposes only.

Small-scale network system configuration

- Reduce the space for module installation
- Reduce hardware cost

■ Network module is no longer necessary, saving on space and hardware cost

MELSEC programmable controller CPUs with an embedded Ethernet port can be used as a master station, eliminating the need for an additional network module. The network can be configured with a minimum number of modules reducing space and hardware cost.

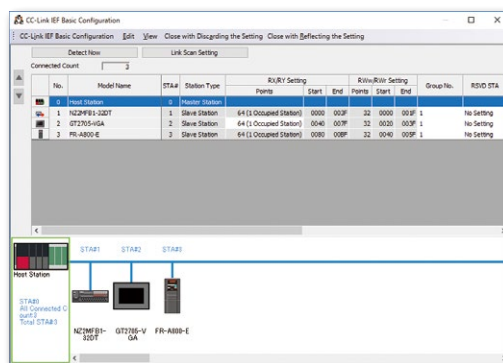


Simple setup and easy troubleshooting

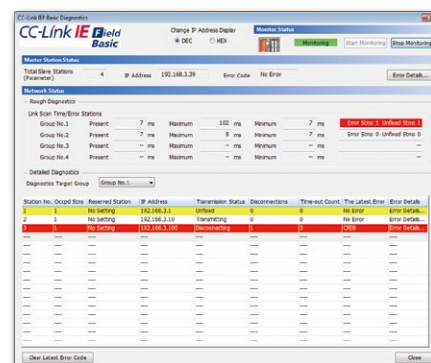
- Set up cyclic communication easily
- Shorten the operating cycle when an error occurs

■ Commissioning by parameter setup and monitoring of operating status

Cyclic communication can be easily done just with parameter setting without requiring dedicated programs. Settings such as IP address can be easily done by automatically detecting slave devices using either the GX Works3 or GX Works2 engineering tool. Maintenance is easier by being able to monitor the operating and communication statuses of nodes connected on the network.



Parameter setting screen



Diagnosis screen

Solar panel production process

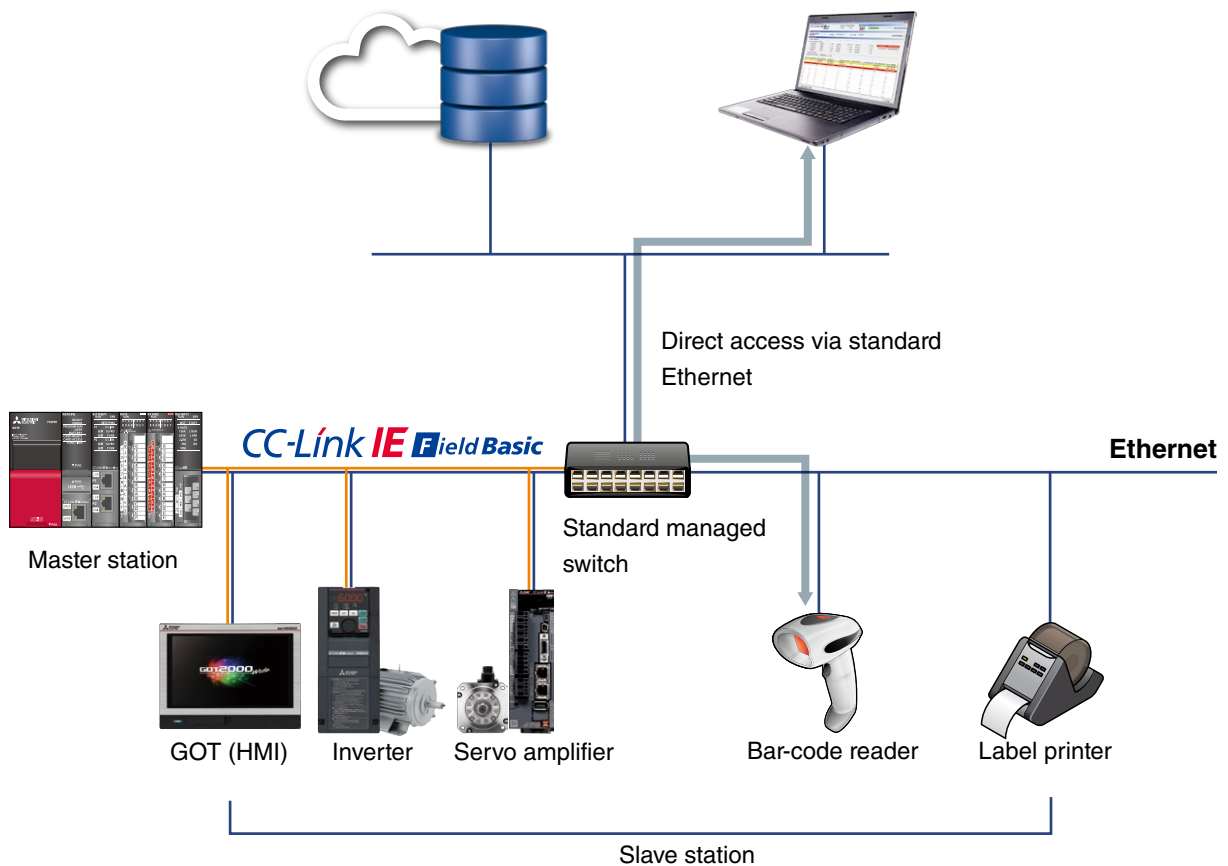


■ Easy data transmission to IT system

Traceability data can be sent to enterprise level devices directly from slave devices other than master station

■ Easy connection with IT system

Direct access to slave devices from enterprise level devices



■ CC-Link IE Field Network Basic master embedded products

- Products with CC-Link IE Field Network Basic embedded
- The Ethernet port enables the product to operate as a CC-Link IE Field Network master station

► MELSEC iQ-R Series

R□□CPU
R□□ENCPU
R12CCPU-V

- 64 slave stations can be connected per network



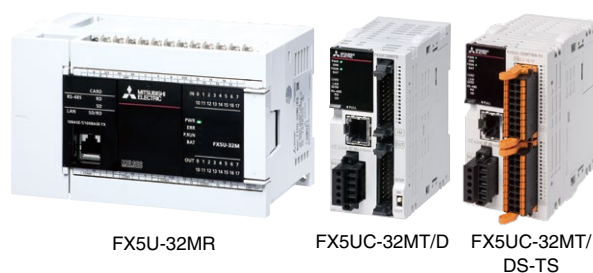
R32CPU

R12CCPU-V

► MELSEC iQ-F Series

FX5U-□□□□/□□□
FX5UC-□□□□/□□□

- 16 slave stations can be connected per network



FX5U-32MR

FX5UC-32MT/D

FX5UC-32MT/
DS-TS

► MELSEC iQ-F Series Ethernet module

FX5-ENET **NEW**

- 32 slave stations can be connected per network



FX5-ENET

► MELSEC-Q Series

Q□□UDVCPU

- 64 slave stations can be connected per network



Q03UDVCPU

► MELSEC-L Series

L□□CPU(-P/-BT/-PBT)

- 16 slave stations can be connected per network



L02CPU

► MELIPC MI5000 Series

MI5122-VW

- 64 slave stations can be connected per network



MI5122-VW

■ CC-Link IE Field Network Basic compatible servo amplifier

► AC Servo MELSERVO-J4/JE Series MR-J4-GF(-RJ) MR-JE-□C

- MR-J4-GF(-RJ)/MR-JE-C support CC-Link IE Field Network Basic
- With the drive system supporting CiA 402 drive profile, positioning systems are configured easily without a Positioning module



MR-J4-□GF

MR-JE-□C

Model*1	Voltage class	Rated output	Fully closed loop	Compatible servo motor		
				Rotary	Linear	DD
MR-J4-□GF	200 V	0.1...22 kW	●	●	●	●
MR-J4-□GF4	400 V	0.6...22 kW	●	●	●	-
MR-J4-□GF1	100 V	0.1...0.4 kW	●	●	●	●
MR-J4-□GF-RJ	200 V	0.1...22 kW	●	●	●	●
MR-J4-□GF4-RJ	400 V	0.6...22 kW	●	●	●	●
MR-J4-□GF1-RJ	100 V	0.1...0.4 kW	●	●	●	-
MR-JE-□C	200 V	0.1...3 kW	-	●	-	-

*1. "□" in the model denotes rated output. For further details about model name, please refer to the "MELSERVO-J4 catalog (L(NA)03058ENG)".

■ CC-Link IE Field Network Basic compatible inverter

► Inverter FREQROL-A800/A800 Plus/F800/E700 Series FR-A800-E FR-A800-E-CRN FR-F800-E FR-E700-NE

- CC-Link IE Field Network Basic function embedded
- CC-Link IE Field Network Basic realizes various inverter operations to be monitored at a fast rate (multiple monitoring and parameter reading/writing can also be executed simultaneously improving maintainability)
- Seamless network environment enables monitoring and setup of inverters from the IT system
- Standard Ethernet is supported without installing a plug-in option, realizing a low cost system easily



FR-A800-E

Model*2	Voltage class	Capacity	Structure/functionality
FR-A820-□K-E	Three-phase 200 V	0.4...90 kW	Standard model
FR-A840-□K-E	Three-phase 400 V	0.4...280 kW	Standard model
FR-A842-□K-E	Three-phase 400 V	315...500 kW	Separated converter type
FR-A846-□K-E	Three-phase 400 V	0.4...132 kW	IP55 compatible model
FR-F820-□K-E	Three-phase 200 V	0.75...110 kW	Standard model
FR-F840-□K-E	Three-phase 400 V	0.75...315 kW	Standard model
FR-F842-□K-E	Three-phase 400 V	355...560 kW	Separated converter type
FR-F846-□K-E	Three-phase 400 V	0.75...160 kW	IP55 compatible model
FR-E720-□K-NE	Three-phase 200 V	0.1...15 kW	Standard model
FR-E740-□K-NE	Three-phase 400 V	0.4...15 kW	Standard model
FR-E720S-□K-NE	Single-phase 200 V	0.1...2.2 kW	Standard model

*2. "□" in the model name denotes rated output. For further details about model name, please refer to the "FR-A800" catalog (L (NA) 06075ENG), "FR-F800" catalog (L (NA) 06085ENG), "FR-E700" catalog (L (NA) 06051ENG).

■ CC-Link IE Field Network Basic compatible robot

► Industrial Robot MELFA FR Series

RV-□□FR RH-□□FRH

- Cyclic communication is possible with CC-Link IE Field Network Basic compatible devices via Ethernet interface embedded as standard
- Communication of I/O signals and device registers between a robot controller and a programmable controller is possible without adding a communication option unit to the robot controller. Hardware cost reduction in system configuration is realized.



RV-7FRL

Type	Environmental specifications	Installation	Maximum load capacity	Maximum reach radius
Vertical 6 axes				
RV-2/4/7/13/20FR	Standard/oil mist/clean room*1	Floor type, ceiling type, wall-mounted type*2	2...20 kg	504...1503 mm
Horizontal 4 axes				
RH-3/6/12/20FRH	Standard/oil mist/clean room*3	Floor type	3...20 kg	350...1000 mm
RH-3FRHR	Standard/clean room/waterproof	Ceiling type	3 kg	350 mm

*1. RV-2FR supports standard only.

*2. Note that J1 axis has operation range limit.

*3. RH-3FRH supports standard and clean only.

■ CC-Link IE Field Network Basic compatible GOT (HMI)

► HMI GOT2000 Series

GT27□□-□□□□ GT25□□□-□□□□ GT210□-□□BD

- Cyclic communication is possible with CC-Link IE Field Network Basic compatible devices via Ethernet interface of GOT (HMI)
- TCP/IP communications are supported, enabling a highly-flexible system



Type*4	Screen size	Panel color	Power supply	Multi-touch gesture functions
GT27				
GT2715-XTB□	15"XGA	Black	100...240 V AC/24 V DC	●
GT2712-ST□□	12.1"SVGA	Black/white	100...240 V AC/24 V DC	●
GT2710-STB□	10.4"SVGA	Black	100...240 V AC/24 V DC	●
GT2710-VT□□	10.4"VGA	Black/white	100...240 V AC/24 V DC	●
GT2708-STB□	8.4"SVGA	Black	100...240 V AC/24 V DC	●
GT2708-VTB□	8.4"VGA	Black	100...240 V AC/24 V DC	●
GT2705-VTBD	5.7"VGA	Black	24 V DC	●
GT25				
GT2512-STB□	12.1"SVGA	Black	100...240 V AC/24 V DC	-
GT2512F-STN□	12.1"SVGA	-	100...240 V AC/24 V DC	-
GT2510-VT□□	10.4"VGA	Black/white	100...240 V AC/24 V DC	-
GT2510F-VTN□	10.4"VGA	-	100...240 V AC/24 V DC	-
GT2508-VT□□	8.4"VGA	Black/white	100...240 V AC/24 V DC	-
GT2508F-VTN□	8.4"VGA	-	24 V DC	-
GT2505-VTBD	5.7"VGA	Black	24 V DC	-
GT2510-WXT□D	10.1"WXGA	Black/silver*5	24 V DC	-
GT2507-WT□D	7"WVGA	Black/silver*5	24 V DC	-
GT2507T-WTSD	7"WVGA	Silver	24 V DC	-
GT2506HS-VTBD	6.5"VGA	Black	24 V DC	-
GT2505HS-VTBD	5.7"VGA	Black	24 V DC	-
GT21				
GT2107-WT□D	7"WVGA	Black/silver*5	24 V DC	-
GT2104-RTBD	4.3"[480 x 272 dots]	Black	24 V DC	-
GT2104-PMBD	4.5"[384 x 128 dots]	Black	24 V DC	-
GT2103-PMBD	3.8"[320 x 128 dots]	Black	24 V DC	-

*4. For further details about model name, please refer to the "GOT 2000 Series consolidated catalog (L(NA)08270ENG)".

*5. The bottom part of the panel including the USB environmental protection cover is black.

■ CC-Link IE Field Network Basic Energy Measuring Unit

► Energy Measuring Unit EcoMonitorLight EMU4-□D1-MB

- EcoMonitorLight enables CC-Link IE Field Network Basic communication when combined with the dedicated option unit
- Single circuit measuring device with an integrated display enabling setting and measuring of current, voltage, and power. Measured data can be utilized for energy-saving for individual equipment



EMU4-□D1-MB

► Energy Measuring Unit EcoMonitorPlus EMU4-□□1-MB (basic unit) EMU4-□□□ (extension unit)

- EcoMonitorPlus enables CC-Link IE Field Network Basic communication when combined with the dedicated option unit
- Combination of basic unit and extension units according to measurement items support leakage current measurement and analog/pulse input in addition to current, voltage, and power measurement of multiple circuits
- Measured data can be utilized for energy-saving, state monitoring, and preventive maintenance for multiple equipment



EMU4-□□1-MB EMU4-□□□

► CC-Link IE Field Network Basic Communication Unit EMU4-CM-CIFB

- Measured energy data can be transmitted via CC-Link IE Field Network Basic communication when connected with EcoMonitorPlus and EcoMonitorLight



EMU4-CM-CIFB

■ CC-Link IE Field Network Basic Block type remote modules

- CC-Link IE Field Network Basic slave station. These modules are useful when installation positions close to I/O devices are required
- Supports CC-Link IE Field Network Basic diagnostic function. Network error and I/O module fault can be checked using the engineering software. Enables CC-Link parameters to be set with simple switch operations

Input modules

Spring clamp terminal block

NZ2MF2S1-32D



NZ2MF2S1-32D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type
NZ2MF2S1-32D	Positive common, Negative common	32 points	24 V DC (6 mA)	1-wire

Screw terminal block

NZ2MFB1-32D



NZ2MFB1-32D

Model	Input type DC input	Input points	Rated input voltage/current	Wiring type
NZ2MFB1-32D	Positive common, Negative common	32 points	24 V DC (6 mA)	1-wire

NZ2MFB2-16A

Model	Input type	Input points	Rated input voltage, frequency	Rated input current	Wiring type
NZ2MFB2-16A	AC input	16 points	100...120 V AC	8.2 mA (100 V AC, 60 Hz), 6.8 mA (100 V AC, 50 Hz)	2-wire

Output modules

Spring clamp terminal block

NZ2MF2S1-32T NZ2MF2S1-32TE1



NZ2MF2S1-32T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2MF2S1-32T	Sink type	32 points	12/24 V DC (0.5 A)	1-wire
NZ2MF2S1-32TE1	Source type	32 points	12/24 V DC (0.1 A)	1-wire

Screw terminal block

NZ2MFB1-32T NZ2MFB1-32TE1



NZ2MFB1-32T

Model	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2MFB1-32T	Sink type	32 points	12/24 V DC (0.5 A)	1-wire
NZ2MFB1-32TE1	Source type	32 points	12/24 V DC (0.1 A)	1-wire

NZ2MFB2-16R

Model	Output type	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2MFB2-16R	Contact output	16 points	24 V DC (2 A), 240 V AC (2 A)	2-wire

I/O combined modules

Spring clamp terminal block

NZ2MF2S1-32DT NZ2MF2S1-32DTE1



NZ2MF2S1-32DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2MF2S1-32DT	Positive common	16 points	24 V DC (6 mA)	Sink type	16 points	24 V DC (0.5 A)	1-wire
NZ2MF2S1-32DTE1	Negative common	16 points	24 V DC (6 mA)	Source type	16 points	24 V DC (0.1 A)	1-wire

Screw terminal block

NZ2MFB1-32DT NZ2MFB1-32DTE1



NZ2MFB1-32DT

Model	Input type DC input	Input points	Rated input voltage/ current	Output type Transistor output	Output points	Rated load voltage/ Max. load current	Wiring type
NZ2MFB1-32DT	Positive common	16 points	24 V DC (6 mA)	Sink type	16 points	24 V DC (0.5 A)	1-wire
NZ2MFB1-32DTE1	Negative common	16 points	24 V DC (6 mA)	Source type	16 points	24 V DC (0.1 A)	1-wire

Options

Industrial switching hub

NZ2EHG-T8N

Powered by CONTEC

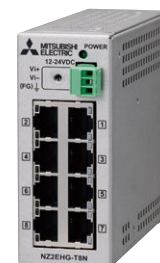
- Supports the transmission speed of 10 Mbps/100 Mbps/1 Gbps
- Equipped with Auto MDI/MDI-X and auto-negotiation functions
- Saves up to 60% power consumption*1 by using the automatic power adjustment function
- Operates in ambient temperatures of 0 to 50°C, with the fan-less configuration
- Compatible with DIN rail installation, enabling the hub to be installed in various orientations

*1. For comparison, power consumption was measured when all 8 ports were used and not used.

NZ2EHG-T8N has a rated input supply voltage of 12 to 24 V DC.

This product was developed and manufactured by Contec Co. Ltd.

Please note that the specifications and conditions of guarantee differ from MELSEC Series products.

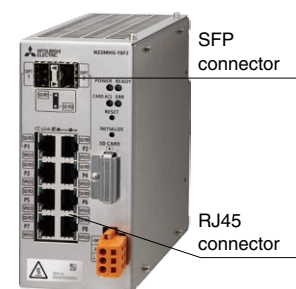


Managed CC-Link IE switch

NZ2MHG-T8F2

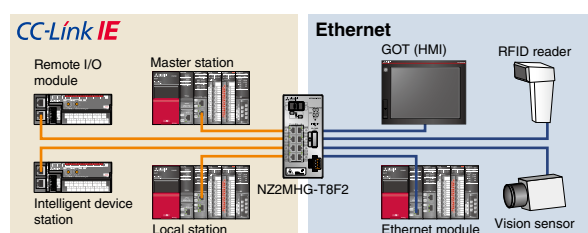
- Supports the transmission speed of 10 Mbps/100 Mbps/1 Gbps
- Connectable to CC-Link IE and Ethernet devices simultaneously
- ERP- and LA- style redundant topologies between switches continue communication at network failure including cable disconnection, by switching network paths
- With an SFP transceiver*2, long-distance optical cable, which is ideal for systems requiring facility-to-facility landline communication is available
- Supports VLAN and can manage multiple networks by one switch
- Supports SNMP, which enables monitoring of the entire network and easy identification of faulty areas (system maintainability is improved with this feature)

NZ2MHG-T8F2 has the rated input voltage of 24 V DC.



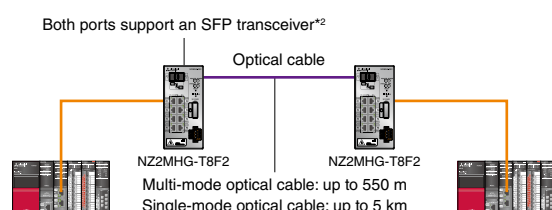
Using along Ethernet network

One managed CC-Link IE switch is connectable to CC-Link IE and Ethernet networks simultaneously without requiring special network configuration



SFP for long-distance communication

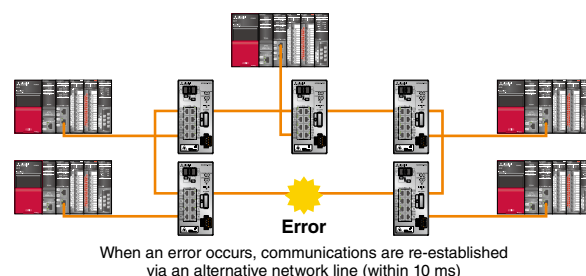
With its long-distance data transmission feature, optical cables are ideal for facility-to-facility long-distance communications



*2. Either the optical port (OPT1/OPT2) or RJ45 port (P1/P2) can be used at a time.

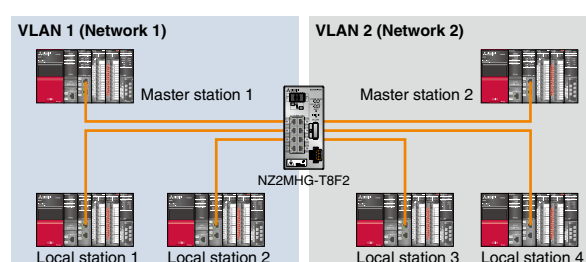
ERP redundant topology

Redundant network paths between switches enable a system to be continuously operated in case of failure



Multiple networks with VLAN

One switch can connect to multiple CC-Link IE networks





Mitsubishi Electric System & Service

For details of Mitsubishi Electric System & Service Co., Ltd. products, please contact by sending an e-mail to the following address.
<Sales office> FA PRODUCT DIVISION mail:osb.webmaster@melsc.jp

■ Industrial switching hub

DT135TX

- Compatible with 10 Mbps/100 Mbps/1000 Mbps transmission speed
- Compact size unit with 5 ports
- Supports 12 V DC up to 24 V DC wide voltage-range. Two power supply inputs (redundant power supply) are possible
- Supports the line, star, line and star combination network topologies
- Complies with UL/CE standards enabling export to Europe and North America



DT135TX

DT125TX-B

- Supports CC-Link IE Field Network Basic
- Compatible with 10 Mbps/100 Mbps transmission speed
- Compact size unit with 5 ports
- Supports 10 V DC up to 30 V DC wide voltage-range. Two power supply inputs (redundant power supply) are possible
- Complies with UL/CE standards enabling export to Europe and North America



Only CC-Link IE Field Network Basic



DT125TX-B

■ Ethernet cable

SC-E5EW Series

- 1000BASE-T Standard compliant. This Ethernet cable with double shield has an outstanding shield performance
- Available in lengths from 1 m to 100 m (in 1 m increments), for using in indoor movable area available lengths are from 1 m to 45 m



Item	SC-E5EW-S□M*1	SC-E5EW-S□M-MV*2	SC-E5EW-S□M-L*1
Cable type	Category 5e or higher, (Double shielded/STP) Straight cable		
Number of core wires	8 wires (4 twisted pairs)		
Double shield	Aluminum/polyester tape, Tin-plated annealed copper wire braid		
Installation environment	Indoor	Indoor movable	Indoor/Outdoor
Finished outside diameter	Flame retardant PVC, 6.8 mm	Flame retardant PVC, 6.5 mm	LAP sheath, 10 mm
Connector	RJ-45 connector with shield, straight connection		
Conforming standards	IEEE802.3 1000BASE-T ANSI/TIA/EIA-568-B (Category 5e) ISO/IEC 11801		

*1. "□" in the model name denotes a cable length (up to 100 m in 1 m increments).

*2. "□" in the model name denotes a cable length (up to 45 m in 1 m increments).

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■ Inline coupler

SPAD-RJ45S-E5E

- 8 conductor RJ-45 female to female, shielded, fits standard type Keystone Wall Plate
- Can be used in patch panels, wall jacks, or to extend cable lengths

Item	Specifications
Adaptable connector	RJ-45 connector with shield
Operable temperature	-10°C...60°C
Conforming standards	IEEE 802.3 1000BASE-T ANSI/TIA/EIA-568-B (Category 5e) ISO/IEC 11801



■ Industrial media converter

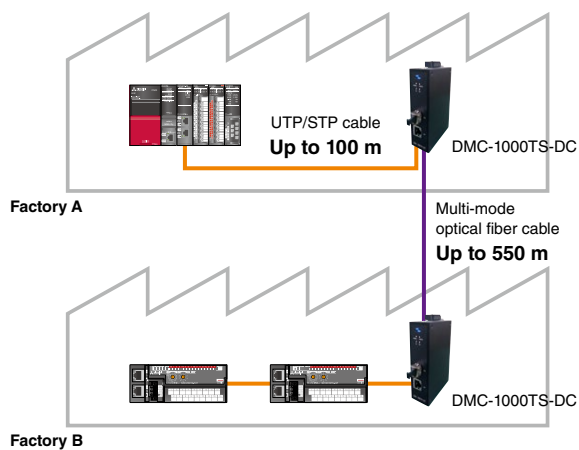
DMC-1000TS-DC

- Station to station distance can be extended up to 550 m
- Noise immunity performance ideal for FA environments ensures use as noise/lightening measures to protect communication line
- Converts 1000BASE-T to 1000BASE-SX and vice versa
- Complies with UL/CE/FCC standards enabling export to Europe and North America



DMC-1000TS-DC

► Application example



► Specification

Item	G1 port	G2 port
Conforming standard	IEEE802.3ab (1000BASE-T) IEEE802.3u (100BASE-TX)	IEEE802.3z (1000BASE-SX)
Compatible cable	Type	Category 5 or higher, UTP/STP cable (IEEE802.3, ANSI/TIA/EIA-568-B)
	Connector	Multi-mode optical fiber cable (core/clad: 50/125 μm Band: 500 MHz-km or higher, λ=850 nm)
	Polishing method of connector	Double LC connector (IEC61754-20)
	Method for connection	PC, SPC polish
Transmission distance	Straight connection	Crossing (A to B, B to A)
Power supply specification	Max. 100 m	Max. 550 m
	12...48 V DC	



Mitsubishi Electric System & Service

■ Optical fiber cable

QP-AW QG-AW QG-B QG-BU QG-C QG-DL QG-VCT

- Short distance cables for inside panels are made of plastic material having break-proof*¹ and superior bending characteristics*²
- A wide range of lineup supports versatile environments. CC-Link Partner Association recommended products
- The indoor and outdoor use cables are free of tension members, and have an allowable tension equivalent to the reinforced type for outdoor use that allows them to be pulled directly
- The UL certified cable QG-BU for indoor use supports the high flame resistant UL Listed (UL Type OFNR) compatible cable that has passed the UL1666 Riser Flame Test
- Reinforced type outdoor use cables are waterproof, and can be used even in flooded or temporarily submerged areas
- A connector boot with improved bending characteristics reduces the possibility of fiber breakage at the connector base



LCF connector
Duplex LC connector (IEC 61754-20)

Model	QP-AW	QG-AW	QG-B	QG-BU	QG-VCT	QG-C	QG-DL	
Operating environment/ application	In the control panel, short distance	In the control panel	Indoor	Indoor, UL approved	Indoor, movable use	Outdoor	Outdoor, reinforced (water shielding)	
Max. cable length	10 m	550 m						
Optical fiber types	Multi-mode optical fiber (GI)							
Material/ outer diameter	Core	Plastic/ 55 ± 5 μm	Fused quartz/50 ± 3 μm					
	Clad	Plastic/ 490 ± 5 μm	Fused quartz/125 ± 2 μm					
	Cable jacket	PVC (blue)/ ø2.0 mm × 2	PVC (orange)/ ø2.0 mm × 2	Flame retardant PE (orange) /ø6.0 mm	Flame retardant PVC (blue) /ø5.0 mm	Elastic PVC (orange) /ø6.0 mm	Flame retardant PE (black) /ø6.0 mm	LAP sheath (black)/ 10.0 mm (2, 4 cores), 11.0 mm (6 cores) 12.0 mm (8 cores)
Operable temperature range	-20...60°C							
Adaptable connector	LCF connector*3, SC connector*4, FC connector*4							

*1. The allowable tension is about twice the QG-AW.

*2. The allowable bending radius is about 1/2 times the QG-AW.

*3. Use LCF connector for connection to the CC-Link IE Control Network products. (LCF connector: two LCF connectors are connected) When installing CC-Link IE Control Network-compatible optical fiber cable, please refer to the installation manual of the CC-Link Partner Association.

*4. The QP-AW does not support SC connector and FC connector.

■ Standard accessories: Protective holder*⁵ (One protective holder is enclosed per cable.)

► Features

- Protects the cable connector base prevents breakage
- Maintains minimum bending radius
- Saves space in control panel (60 mm or less from the front of programmable controller to end of protective holder)

*5. The protective holder is dedicated to the Mitsubishi Electric System Service Co., Ltd. LCF connector and is not available as a single unit. It cannot be used with other LCF connector brands.

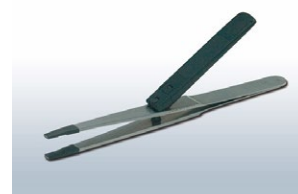


■ Connector insertion tool

SCT-SLM

- Insert or remove connectors easily, even in tight spaces such as crowded control panels

► Applicable connector..... LCF/LC/SC/MU connector



Mitsubishi Electric System & Service

Splice adapter

SPAD-LCF-G50 SPAD-SCF-G50 SPAD-FC-G50

- Extends optical cable (Splice connection)
- Temporary connection for stations which may be extended later



SPAD-LCF-G50

Applicable connector

Type	Model	Specifications
Splice adapter for LCF Connector	SPAD-LCF-G50	Splice adapter for LCF connector, multimode 2 cores Connection loss: 0.3 dB (with master fiber)
Splice adapter for SC Connector	SPAD-SCF-G50	Splice adapter for SC connector, multimode 2 cores Connection loss: 0.3 dB (with master fiber)
Splice adapter for FC Connector	SPAD-FC-G50	Splice adapter for FC connector, multimode 1 core Connection loss: 0.3 dB (with master fiber)

Industrial media converter

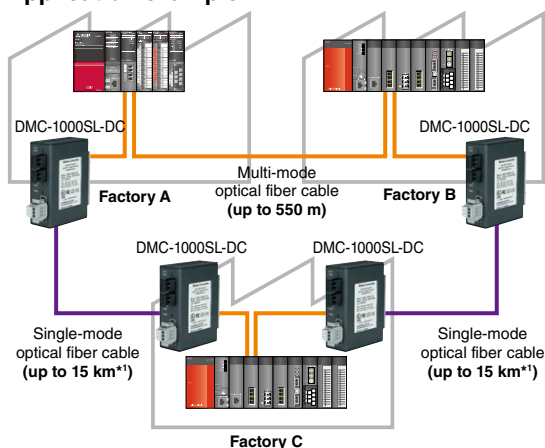
DMC-1000SL-DC

- When the station-to-station distance is greater than 550 m, two of these units can extend the total station-to-station distance up to 15 km
- Equipped with the link pass through function, this converter supports the network loop-back function in case of a cable disconnection



DMC-1000SL-DC

Application example



*1. Multi-mode optical fiber cable can be also used for connection. The transmission distance is up to 550 m.

Specifications

Item	DMC-1000SL-DC	
	OPT1 port	OPT2 port
Conforming standard	IEEE802.3z Gigabit Ethernet (1000BASE-LX)	IEEE802.3z Gigabit Ethernet (1000BASE-SX)
Transmission format	Full duplex system	
Compatible cable	Optical fiber	1000BASE-LX compatible single-mode optical fiber cable/ 1000BASE-SX compatible multi-mode optical fiber cable*2 (Band: 500 MHz · km or higher, $\lambda=850$ nm)
	Connector	Duplex LC connector (IEC 61754-20)
	Polishing method of connector	PC, SPC, AdPC, UPC polish
	Method for connection	PC, SPC polish
Power supply specification	20.4 V...26.4 V DC (Power supply terminal block)	
Standards	UL, CE, FCC Part15 Class B, VocI Class B	
Series connection	4 (max.)	

*2. To connect to the CC-link IE Control Network product, use the Mitsubishi Electric system & service QG series optical fiber cable.

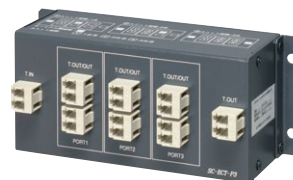


Mitsubishi Electric System & Service

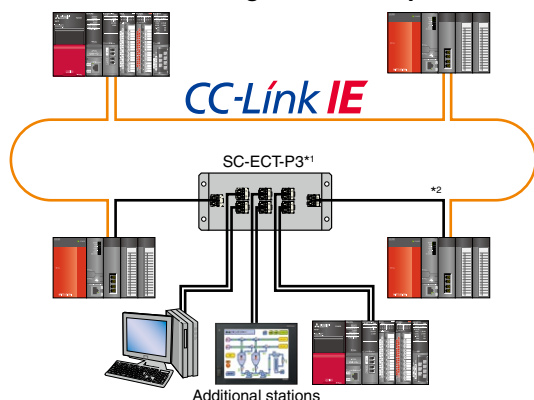
■ Connection terminal

SC-ECT-P3

- Enables up to 3 stations to be added between existing stations
- With stations that can easily be added or removed, the maintainability is improved
- Allows for expansion of the network without having to change the existing cabling
- Installable on the DIN rail or with screw brackets



► Communication configuration example



*1. At least one unit should be connected to the connection terminal.

*2. The solid black lines represent cables with a maximum distance of 150 meters. If any station goes down, the loop back function will still be operational.

► Specifications

Item		Specifications
Applicable optical fiber cable	Standard	1000 BASE-SX (MMF)-compatible optical fiber cable
	Transmission loss (max.)	IEC60793-2-10 Types A1a.1 (50/125 μ m multimode)
	Transmission band (min.)	≤ 3.5 dB/km ($\lambda = 850$ nm)
	Model	≥ 500 MHz·km ($\lambda = 850$ nm)
Applicable optical connector	Standard	Duplex LC connector
	Connection loss	IEC 61754-20: Type LC connector
	Polished face	≤ 0.3 dB
	Model	PC polish
Number of possible connections		DLCF-G50-D2*3
Connection distance		Max. 3 units*1
		Max. 150 m*4

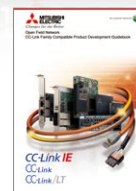
*3. Parts provided by Mitsubishi Electric System & Service.

*4. Cable length from SC-ECT-P3 to any other connection point.

The products listed here are manufactured by Mitsubishi Electric System & Service Co., Ltd. Please note that the specifications and guarantee conditions of the products are different from the MELSEC Series products.

Development tool

For further details, please refer to the "Open Field Network CC-Link Family Compatible Product Development Guidebook (L(NA)08052E)".

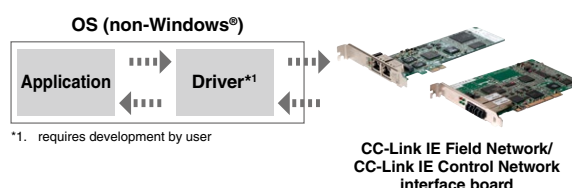


■ Network interface board driver development

The reference manual (for developing a driver for the various operating systems) is provided to customers who wish to use the network interface board with an operating system other than Windows®. This reference manual contains sample C programs, aiming to save the developer's programming time and cost.



Reference manual



Manual name	Manual number
CC-Link IE Field Network Q80BD-J71GF11-T2/Q81BD-J71GF11-T2 Driver Development Reference Manual	SH(NA)-081155ENG
CC-Link IE Control Network Q80BD-J71GP21-SX Driver Development Reference Manual	SH(NA)-080819ENG

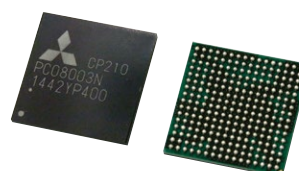
■ CC-Link IE Field Network source code development

- The items shown on the right support development of CC-Link IE Field Network master stations*2, without requiring in-depth knowledge of the protocol
- CP210 is a communication LSI dedicated to CC-Link IE Field Network master stations
- The source code CD-ROM contains C program source codes and circuit examples (PDF), aiming to save the developer's programming time and cost

*2. Does not support local station development.



Source code Reference manual

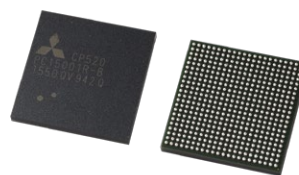


Dedicated communication LSI

Type	Model	
Source code development CD-ROM	SW1DNC-EFI210SRC	
Type	Model	Packaging unit
Dedicated communication LSI CP210	NZ2GACP210-60	60 pieces
	NZ2GACP210-300	300 pieces
Type	Manual number	Manual name
Reference manual	SH(NA)-081455ENG	CC-Link IE Field Network Source Code Development Master Station Communication LSI CP210 Reference Manual

■ Communication LSI embedded with GbE-PHY CP520

- The items shown on the right support development of CC-Link IE Field Network slave stations, without requiring in-depth knowledge of the protocol
- CP520 supports development of CC-Link IE Field Network intelligent device station and remote device station
- CP 520 is integrated communication LSI embedded with CC-Link IE Field Network communication ASIC, MPU, and GbE-PHY
- The integrated communication LSI saves the developer's programming time and cost related to MPU and GbE-PHY



Communication LSI embedded with GbE-PHY



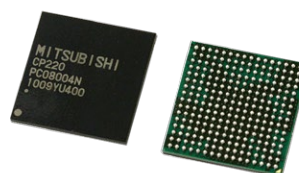
Reference manual (CD-ROM)

Type	Model	Packaging unit
Communication LSI embedded with GbE-PHY CP520	NZ2GACP520-60	60 pieces
	NZ2GACP520-300	300 pieces

Type	Manual number	Manual name
Reference manual	SH(NA)-081570ENG	CC-Link IE Field Network Intelligent Device Station Communication LSI Embedded with GbE-PHY CP520 Reference Manual

■ Dedicated communication LSI, CP220

- The items shown on the right support development of CC-Link IE Field Network slave stations, without requiring in-depth knowledge of the protocol
- CP220 is a dedicated communication LSI for intelligent device stations of CC-Link IE Field Network
- The reference manual CD-ROM contains C program sample codes and circuit examples (PDF), aiming to save the developer's programming time and cost



Dedicated communication LSI



Reference manual (CD-ROM)

Type	Model	Packaging unit
Dedicated communication LSI CP220	NZ2GACP220-60	60 pieces
	NZ2GACP220-300	300 pieces

Type	Manual number	Manual name
Reference manual	SH(NA)-081017ENG	CC-Link IE Field Network Intelligent Device Station Communication LSI CP220 Reference Manual

For price and other details, please contact your local Mitsubishi Electric office or sales representative.

Membership (regular, executive, or board membership) to CC-Link Partner Association (CLPA) is required for purchasing the development tools for CC-Link IE Field Network source code development and for the development incorporating the communication LSI embedded with GbE-PHY, CP520 and dedicated communication LSI, CP220.

CC-Link Partner Association URL: <http://www.cc-link.org>

The license agreement must be signed prior to using the development tools for CC-Link IE Field Network source code development.

For hardware/software development, a referral to a partner is available on request.

Mitsubishi Electric Corporation Open System Center supports development using the development tools described in this section.

CC-Link IE Field Network/CC-Link IE Field Network Basic

remote module

General specifications

Below are the environmental specifications where CC-Link IE Field Network/CC-Link IE Field Network Basic Block type remote module is to be used. For the general specifications of other products, please refer to the catalog or manual of the product. For the general specifications of double-branded products and the products manufactured by other companies, please contact the manufacturer of the product.

Item	Block type remote module		Block type safety remote I/O module		
Operating ambient temperature	0...55°C				
Storage ambient temperature	-25...75°C		-40...75°C		
Operating ambient humidity	5...95%RH, non-condensing				
Storage ambient humidity					
Vibration resistance	Compliant with JIS B 3502, IEC 61131-2				
	Under intermittent vibration	Frequency	Acceleration	Half amplitude	Sweep count
		5...8.4 Hz	-	3.5 mm	10 times each in X, Y, Z directions
	Under continuous vibration	8.4...150 Hz	9.8 m/s ²	-	
		5...8.4 Hz	-	1.75 mm	
		8.4...150 Hz	4.9 m/s ²	-	-
Shock resistance	Compliant with JIS B 3502, IEC 61131-2 (147 m/s ² , 3 times in each of 3 directions X, Y, Z)		Compliant with JIS B 3502, IEC 61131-2 (147 m/s ² , Operation time: 11 ms, 3 times in each of 3 directions X, Y, Z)		
Operating ambient (humidity/temperature)	No corrosive gases		No corrosive gases**1, no flammable gases, no excessive conductive dust		
Operating altitude* ²	0...2000 m* ³				
Installation location	Inside a control panel				
Overvoltage category* ⁴	≤ II				
Pollution level* ⁵	≤ 2				
Equipment class	Class 1		Class 3		

Item	Waterproof/dustproof type remote module	Waterproof/dustproof type safety remote I/O module	Waterproof/dustproof type remote IO-Link module		
Operating ambient temperature	0...55°C		0...55°C (0...40°C for UL listed)		
Storage ambient temperature	-25...75°C				
Operating ambient humidity	Complies with IP67*6				
Storage ambient humidity	5...95%RH, non-condensing				
Vibration resistance	Compliant with JIS B 3502, IEC 61131-2				
	Under intermittent vibration	Frequency	Acceleration	Half amplitude	Sweep count
		5...8.4 Hz	-	3.5 mm	10 times each in X, Y, Z directions
	Under continuous vibration	8.4...150 Hz	9.8 m/s²	-	
		5...8.4 Hz	-	1.75 mm	
		8.4...150 Hz	4.9 m/s²	-	-
Shock resistance	Compliant with JIS B 3502, IEC 61131-2 (147 m/s², 3 times in each of 3 directions X, Y, Z)				
Operating ambient (humidity/temperature)	No corrosive gases				
Operating altitude*2	0...2000 m*3				
Installation location	Inside a control panel, outside a control panel				
Overvoltage category*4	≤ II				
Pollution level*5	≤ 2				
Equipment class	Class 1	Class 3			

*1. Use the special coated products which comply with the IEC 60721-3-3 3C2 in the environment with the corrosive gases. For details on the special coated products, please contact your sales representative.

*2. Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0 m. Doing so may cause malfunction. When using the programmable controller under pressure, please consult your local Mitsubishi Electric representative.

*3. When the programmable controller is used at altitude above 2000 m, the withstand voltage performance and the upper limit of the operating ambient temperature decrease. When using the programmable controller under pressure, please contact your sales representative.

*4. This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.

*5. This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.

*6. Only when all necessary waterproof connectors and caps have been installed and the station number setting switch cover has been properly tightened with a screw, the module conforms to IP67. For the tightening torque range of the screw for the station number setting switch cover, refer to the relevant product manual.

CC-Link IE Field Network performance specifications

Item	MELSEC iQ-R Series R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU RJ71EN71	MELSEC iQ-R Series master/local module RJ71GF11-T2	MELSEC-Q Series master/local module QJ71GF11-T2	MELSEC-L Series master/local module LJ71GF11-T2	Network interface board Q80BD-J71GF11-T2, Q81BD-J71GF11-T2	MELSEC iQ-R Series simple motion module RD77GF4 RD77GF8 RD77GF16 RD77GF32	MELSEC-Q Series simple motion module QD77GF4 QD77GF8 QD77GF16
Communication speed	1 Gbps						
Maximum stations per network	121 stations (1 master station, 120 slave stations)						
Connection cable	Ethernet cable (Category 5e or higher, double shielded/STP), straight cable						
Overall cable distance	Line type: 12,000 m (When 1 master station and 120 slave stations are connected) Star type: Depends on system configuration*1 Ring type: 12,100 m (When 1 master station and 120 slave stations are connected)					Line type: 12,000 m (When 1 master station and 120 slave stations are connected) Star type: Depends on system configuration*1	
Maximum station-to-station distance	100 m						
Maximum number of networks	239						
Network topology	Line type, star type*2, ring type					Line type, star type*2	
Communication method	Token-pass						
Maximum link points per network*3							
RX	16384 points, 2K bytes						8192 points, 1K bytes
RY	16384 points, 2K bytes						8192 points, 1K bytes
RWr	8192 points, 16K bytes						1024 points, 2K bytes
RWw	8192 points, 16K bytes						1024 points, 2K bytes
Maximum link points per station*3							
Master station	RX	16384 points, 2K bytes					8192 points, 1K bytes
	RY	16384 points, 2K bytes					8192 points, 1K bytes
	RWr	8192 points, 16K bytes					1024 points, 2K bytes
	RWw	8192 points, 16K bytes					1024 points, 2K bytes
Local station*4	RX	2048 points, 256 bytes					-
	RY	2048 points, 256 bytes					-
	RWr	1024 points, 2048 bytes			256 points, 512 bytes		-
	RWw	1024 points, 2048 bytes			256 points, 512 bytes		-
Intelligent device station	RX	2048 points, 256 bytes					
	RY	2048 points, 256 bytes					
	RWr	1024 points, 2048 bytes			256 points, 512 bytes		1024 points, 2048 bytes
	RWw	1024 points, 2048 bytes			256 points, 512 bytes		1024 points, 2048 bytes
Remote device station	RX	128 points, 16 bytes					
	RY	128 points, 16 bytes					
	RWr	64 points, 128 bytes					
	RWw	64 points, 128 bytes					
Safety communications							
Maximum number of safety connections per network	-	1814 connections	-				
Maximum number of safety connections per station	-	120 connections	-				
Maximum number of link points per safety connection	-	8 words (input: 8 words, output: 8 words)	-				
Transient transmission capacity							
Transient transmission capacity	1920 bytes maximum						

*1. A hub is required to use the star type wiring. Up to 20 hubs can be connected.

*2. Line and star types can also be mixed.

*3. Remote input RX: Bit data input from a slave station to the master station
Remote output RY: Bit data output from the master station to a slave station
Remote register RWr: 16-bit (word) unit data output from the master station to a slave station
Remote register RWw: 16-bit (word) unit data output from the master station to a slave station
* May partially differ for local stations

*4. Number of link points allocated by the master station. A local station can also use other link points to receive data from other stations.

For further details, please refer to the relevant product manuals.

CC-Link IE Control Network performance specifications

Item	MELSEC iQ-R Series R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU RJ71EN71	MELSEC iQ-R Series RJ71GP21-SX	MELSEC-Q Series QJ71GP21-SX QJ71GP21S-SX	Network interface board Q80BD-J71GP21-SX Q80BD-J71GP21S-SX Q81BD-J71GP21-SX Q81BD-J71GP21S-SX
Communication speed	1 Gbps			
Maximum stations per network	120 (1 control station, 119 normal stations)**1			
Connection cable	Ethernet cable (Category 5e or higher, double shielded/STP), straight cable	Multi-mode optical cable		
Laser class (JIS C 6802, IEC 60825-1)	-	Class 1 laser product		
Overall cable distance	Line type: 11,900 m*2 Star type: Depends on system configuration Ring type: 12,000 m*2	66,000 m*2		
Maximum station-to- station distance	100 m	550 m		
Maximum number of networks	239			
Maximum number of groups	32			
Network topology	Line type, star type*3, ring type	Duplex loop ring		
Communication method	Token-pass	Token-ring		
Maximum link points per network**4				
LB	32768 points, 4K bytes		32768 points, 4K bytes*5	32768 points, 4K bytes
LW	131072 points, 256K bytes		131072 points, 256K bytes*6	131072 points, 256K bytes
LX	8192 points, 1K bytes			
LY	8192 points, 1K bytes			
Communication speed**4 (Regular mode)				
LB	16384 points, 2K bytes			
LW	16384 points, 32K bytes			
LX	8192 points, 1K bytes			
LY	8192 points, 1K bytes			
Communication speed**4 (Extended mode*7)				
LB	32768 points, 4K bytes			
LW	131072 points, 256K bytes			
LX	8192 points, 1K bytes			
LY	8192 points, 1K bytes			
Transient transmission capacity				
Transient transmission capacity	1920 bytes maximum			

*1. Under CC-Link IE Control Network, the number of connectable normal stations per network differs by the CPU module used in the control station.
For the details, please refer to the manual of the module used in the control station.

*2. When 120 stations are connected.

*3. Line and star types can also be mixed.

*4. Link relay LB: Bit data transmitted from stations in the network.
Link register LW: 16-bit (word) unit data transmitted from stations in the network.
Link input LX: Data input from a station to the I/O master in the same block.
Link output LY: Data output from the I/O master station to another station in the same block.

*5. 16384 points and 2K bytes for the basic model QCPU and the MELSEC-QS Series Safety CPU.

*6. 16384 points and 32K bytes for the basic model QCPU and the MELSEC-QS Series Safety CPU.

*7. To use the extended mode, all the stations must be compatible with the extended mode.

CC-Link IE Field Network Basic performance specifications

Item	MELSEC iQ-R Series	MELSEC-Q Series	MELSEC-L Series	MELSEC iQ-F Series	Network module	MELIPC
	R□CPU R□ENCPU	Q□UDVCPU	L□CPU	FX5U FX5UC	FX5-ENET	MI5122-VW
Communication speed	100 Mbps					
Maximum stations per network*1	64 stations (16 stations × 4 groups)		16 stations	16 stations*2	32 stations (16 stations × 2 groups)	64 stations (16 stations × 4 groups)
Connection cable	Ethernet standard compatible cable, Category 5e or higher (STP cable)					
Maximum station-to-station distance	100 m (between a hub and node)*3					
Network topology	Star type					
Communication method	UDP					
Maximum link points per network*4						
RX	4096 points		1024 points	1024 points*2	2048 points	4096 points
RY	4096 points		1024 points	1024 points*2	2048 points	4096 points
RWr	2048 points		512 points	512 points*2	1024 points	2048 points
RWw	2048 points		512 points	512 points*2	1024 points	2048 points
Maximum link points per station*4						
Master station	RX	4096 points		1024 points	1024 points*2	2048 points
	RY	4096 points		1024 points	1024 points*2	2048 points
	RWr	2048 points		512 points	512 points*2	1024 points
	RWw	2048 points		512 points	512 points*2	1024 points
Slave station*5	RX	64 points; up to 256 points can be allocated according to the number of stations				
	RY	64 points; up to 256 points can be allocated according to the number of stations				
	RWr	32 points; up to 128 points can be allocated according to the number of stations				
	RWw	32 points; up to 128 points can be allocated according to the number of stations				

*1. Maximum number of slave stations controlled by the master station, depending on the number of allocated slave stations. The total number of allocated stations should not exceed the maximum number of slave stations.

*2. Supported in the CPU module firmware version of "1.110" or later.

*3. The maximum distance between stations depends on the actual hub used. Please refer to the hub manufacturer's specifications.

*4. Remote input RX: Bit data input from a slave station to the master station

Remote output RY: Bit data output from the master station to a slave station

Remote register RWr: 16-bit (word) unit data output from the master station to a slave station

Remote register RWw: 16-bit (word) unit data output from the master station to a slave station

*5. Number of link points allocated by the master station.

For detailed information about performance specifications, please refer to the "CC-Link IE Field Network Basic Reference Manual (SH(NA)-081684ENG)".

Network specifications comparison

■ Control level

Item	CC-Link IE Control Network		MELSECNET/H		
	Optical duplex loop	Twisted pair	Optical loop method	Coaxial bus method	Twisted bus method
Communication speed [bps]	1 G		25 M	10 M	10 M (max.)
Maximum stations per network	120*6		65	33	32
Maximum link points					
Per network	128K*7		16K*7		
Per station	128K*7		16K*7		
Distance					
Overall [km]	66	12*8	30	2.5*9	0.1 (10 Mbps)
Station-to-station [m]	550	100	1000	500	100 (10 Mbps)
Communication					
Network topology	Duplex loop ring	Star type, line type, ring type	Duplex loop ring	Bus type	Bus type
Connection cable	Ethernet cable (Multi-mode optical fiber)	Ethernet cable (Category 5e or higher, double shielded/STP)	Optical fiber cable	Coaxial cable	Twisted pair cable

■ Field level

Item	CC-Link IE Field Network	CC-Link IE Field Network Basic	CC-Link
Communication speed [bps]	1 G	100 M	10 M (max.)
Maximum stations per network	121	65*10	65*10
Maximum link points			
Per network	16K*11	4K*11	4K*11
Per station	2K*11	256*11 (When 4 stations are occupied)	256*11 (When 4 stations are occupied)
Distance			
Overall [km]	12.1*8	Depends on system configuration	1.1*9 (10 Mbps)
Station-to-station [m]	100	100	100 (10 Mbps)
Communication			
Network topology	Star type, line type, ring type	Star type	Bus type, T-branch type, star type
Connection cable	Ethernet cable (Category 5e or higher, double shielded/STP)	Ethernet cable (Satisfies 100BASE-TX)	Twisted pair cable (CC-Link dedicated cable)

*6. Value when the extended mode is used.

*7. Value of link register LW (word).

*8. Value when ring connection is used.

*9. Value when a repeater is used.

*10. The maximum stations per network differ according to programmable controller Series.

*11. Value of remote register RWr + RWw (word).

Cable specifications

CC-Link IE compatible twisted-pair cable*1

Item		Specifications
Twisted-pair cable specifications		Category 5e or higher, (double shielded/STP) straight cable
	Standard	Cables that conform to the following standards. • IEEE802.3 (100BASE-T) • ANSI/TIA/EIA-568-B (Category 5e)
Connector specifications	Standard	RJ-45 connector with shield

CC-Link IE compatible optical cable*1

Item		Specifications
Optical cable specifications		1000BASE-SX (MMF) optical cable
	Standard	IEC 60793-2-10 Types A1a.1 (50/125 μ m multimode)
	Transmission loss (max.)	≤ 3.5 dB/km ($\lambda = 850$ nm)
	Transmission band (min.)	≥ 500 MHz-km ($\lambda = 850$ nm)
Connector specifications		Duplex LC connector
	Standard	IEC 61754-20: Type LC connector
	Connection loss	≤ 0.3 dB
	Polished face	PC (Physical Contact) polishing

*1. For recommended cables and other information, contact the CC-Link Partner Association.

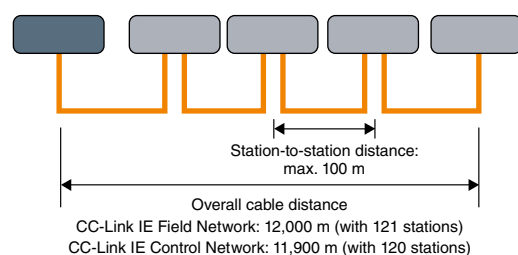
CC-Link IE Field Network Basic compatible twisted-pair cable

Item		Specifications
Twisted-pair specifications		Category 5e or higher, (STP) straight cable
	Standard	Category 5 or 5e, (STP) cross cable
Connector specifications		Cables that satisfy following standards • IEEE802.3 (100BASE-TX) • ANSI/TIA/EIA-568-B (Category 5)
	Standard	RJ45

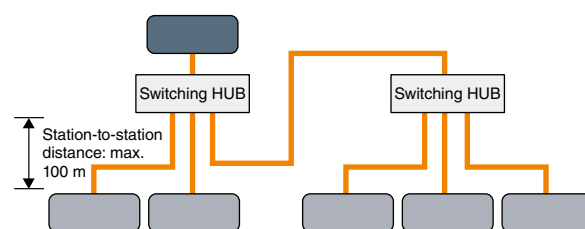
Network topologies*2

*2. CC-Link IE Field Network Basic supports star topology only.

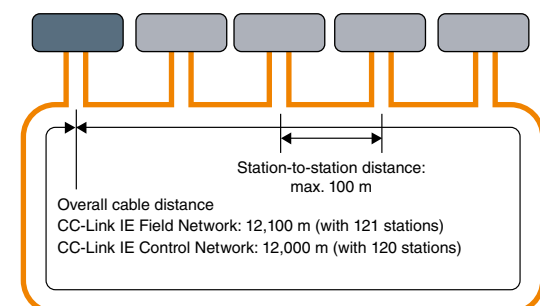
Line topology (Twisted-pair cable)



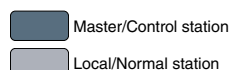
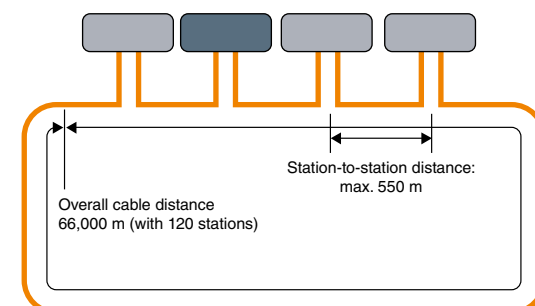
Star topology (Twisted-pair cable)



Ring topology (Twisted-pair cable)



Ring topology (Dual-loop optical fiber)



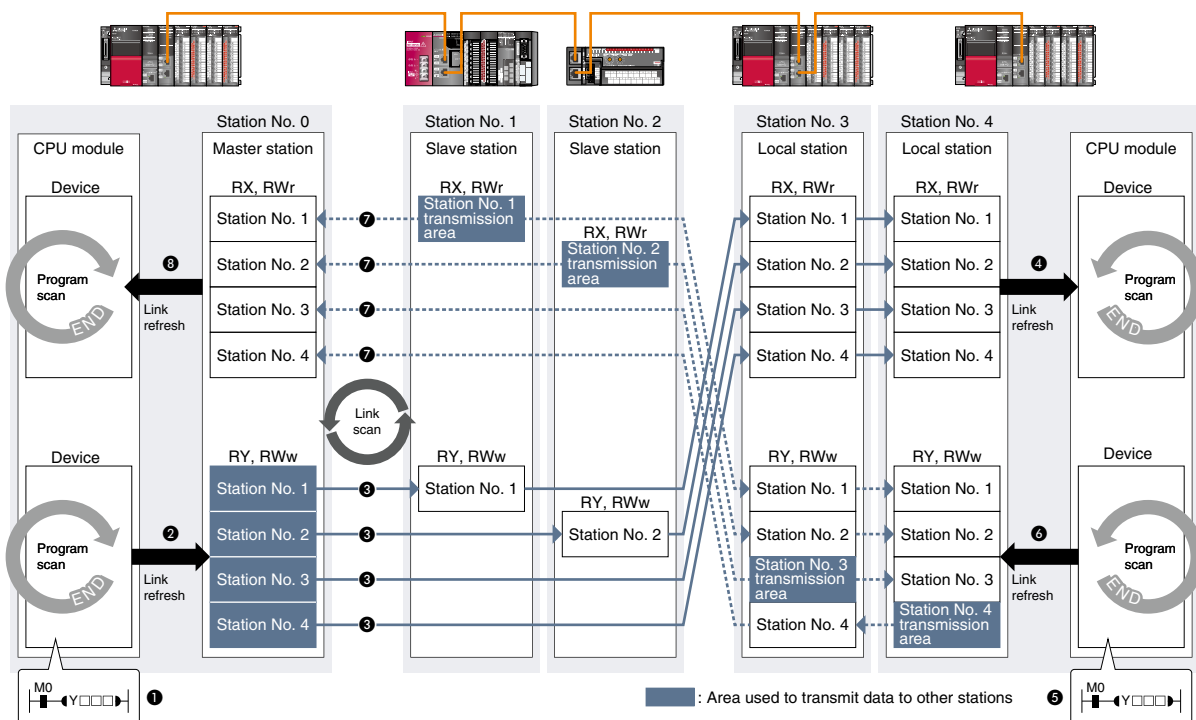
Cyclic transmission

In cyclic transmission, data is transmitted periodically using link devices. Under CC-Link IE Field and Control networks, some differences exist as described in this section.

■ CC-Link IE Field Network*1

One-to-one communication is possible between the master and slave stations. The status of link devices (RY, RWw) within the master station are transmitted to an external device connected to a slave station. Likewise, the status of external devices is transmitted to the master station link devices (RX, RWr) via the slave station. In the case of local stations, the status of the master station link devices (RY, RWw) is relayed to all local station link devices (RX, RWr) on the network. When an input from a slave or local station is executed, the slave station link devices (RX, RWr) status and local station link devices (RY, RWw) status are stored in the master station link device (RX, RWr), along with other local station link devices (RY, RWw). As a result, all local stations possess the data of other slave stations, similar to the master station.

*1. The data is transmitted in the same method on CC-Link IE Field Network Basic. Note that communication is made between the master station and the slave stations only. No local stations are available on the CC-Link IE Field Basic.



Output from the master station

- ① In the master station, devices of the CPU module turn ON.
- ② In the master station, the status of the CPU module devices are stored in the link devices (RY, RWw) by link refresh.
- ③ The status of the master station link devices (RY, RWw) are then stored in the slave station link devices (RY, RWw), and in the local station link devices (RX, RWr) by link scan.
- ④ The status of the local station link devices (RX, RWr) are stored in the CPU module devices.

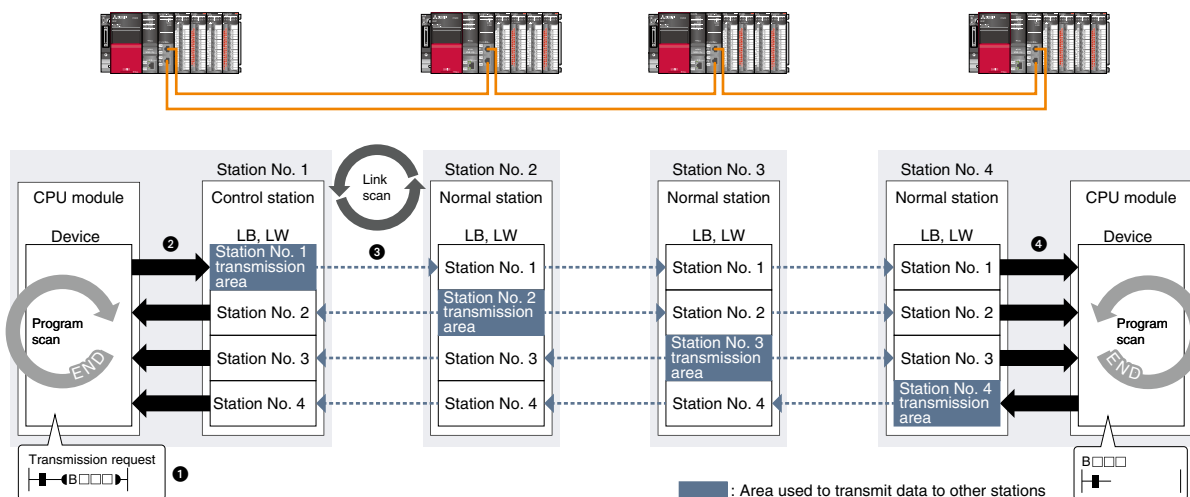
Input from the slave or local station

- ⑤ In the local station, devices of the CPU module turn ON.
- ⑥ In the local station, the status of the CPU module devices are stored in its own station link devices (RY, RWw) transmission area.
- ⑦ The status of the slave station link devices (RX, RWr), and the local station link devices (RY, RWw) are stored in the master station link devices (RX, RWr) by link scan.
- ⑧ The status of the master station link devices (RX, RWr) are stored in the CPU module devices by link refresh.

■ CC-Link IE Control Network

► Communications using link relays (LB) and link registers (LW)

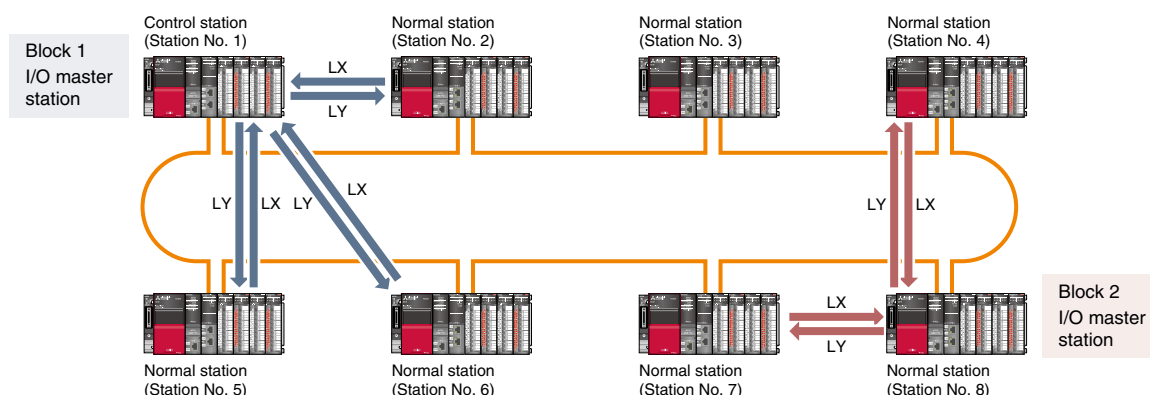
This function allows each station to write data to its own send range of a link device (LB, LW) to send them to all other stations on the network. The status data of the control station link devices (LB, LW) are stored in the link devices (LB, LW) of each normal station. Likewise, the status of the normal station link devices (LB, LW) is stored in link devices (LB, LW) of the control and other normal stations.



- ① In the transmitting station, the CPU module devices turn ON.
- ② In the transmitting station, the CPU module devices status are stored in the link devices (LB, LW) of the CC-Link IE Control Network supporting module by link refresh.
- ③ The status of the link devices (LB, LW) in the transmitting station are sent to the link devices (LB, LW) of the CC-Link IE Control Network supporting module in the receiving station by link scan.
- ④ In the receiving station, the status of the link devices (LB, LW) are stored in the CPU module devices.

► Transmissions using link inputs (LX) and link outputs (LY)

An I/O master station, which controls link inputs (LX) and link outputs (LY), and another station make one to one communication. LX is the input data transmitted between stations in a block, and LY is the output data transmitted from the I/O master station in a block. The control or normal station can be an I/O master station, and up to two I/O master stations (block 1 and block 2) can be used per network.



Transient transmission

This function allows communications with other stations when a request is made by a method such as a dedicated instruction and engineering tool. Communications with different networks is also possible.

Extensive global support coverage providing expert help whenever needed

■ Global FA centers

■ EMEA

Europe FA Center

MITSUBISHI ELECTRIC EUROPE B.V. Polish Branch
Tel: +48-12-347-65-81

Germany FA Center

MITSUBISHI ELECTRIC EUROPE B.V. German Branch
Tel: +49-2102-486-0 / Fax: +49-2102-486-1120

UK FA Center

MITSUBISHI ELECTRIC EUROPE B.V. UK Branch
Tel: +44-1707-27-8780 / Fax: +44-1707-27-8695

Czech Republic FA Center

MITSUBISHI ELECTRIC EUROPE B.V. Czech Branch
Tel: +420-255 719 200

Italy FA Center

MITSUBISHI ELECTRIC EUROPE B.V. Italian Branch
Tel: +39-039-60531 / Fax: +39-039-6053-312

Russia FA Center

MITSUBISHI ELECTRIC (RUSSIA) LLC ST.
Petersburg Branch
Tel: +7-812-633-3497 / Fax: +7-812-633-3499

Turkey FA Center

MITSUBISHI ELECTRIC TURKEY A.S Umraniye Branch
Tel: +90-216-526-3990 / Fax: +90-216-526-3995

■ Asia-Pacific

China

Beijing FA Center

MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
Beijing FA Center
Tel: +86-10-6518-8830 / Fax: +86-10-6518-2938

Guangzhou FA Center

MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
Guangzhou FA Center
Tel: +86-20-8923-6730 / Fax: +86-20-8923-6715

Shanghai FA Center

MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
Shanghai FA Center
Tel: +86-21-2322-3030 / Fax: +86-21-2322-3000

Tianjin FA Center

MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
Tianjin FA Center
Tel: +86-22-2813-1015 / Fax: +86-22-2813-1017

Taiwan

Taipei FA Center

SETSUYO ENTERPRISE CO., LTD.
Tel: +886-2-2299-9917 / Fax: +886-2-2299-9963

Korea

Korea FA Center

MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD.
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Thailand

Thailand FA Center

MITSUBISHI ELECTRIC FACTORY AUTOMATION
(THAILAND) CO., LTD.
Tel: +66-2682-6522-31 / Fax: +66-2682-6020

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ASEAN FA Center

MITSUBISHI ELECTRIC ASIA PTE. LTD.
Tel: +65-6470-2480 / Fax: +65-6476-7439

Indonesia

Indonesia FA Center

PT. MITSUBISHI ELECTRIC INDONESIA
Cikarang Office
Tel: +62-21-2961-7797 / Fax: +62-21-2961-7794

Vietnam

Hanoi FA Center

MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED
Hanoi Branch Office
Tel: +84-4-3937-8075 / Fax: +84-4-3937-8076

Ho Chi Minh FA Center

MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED
Tel: +84-8-3910-5945 / Fax: +84-8-3910-5947

India

India Ahmedabad FA Center

MITSUBISHI ELECTRIC INDIA PVT. LTD.
Ahmedabad Branch
Tel: +91-7965120063

India Bangalore FA Center

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Bangalore Branch
Tel: +91-80-4020-1600 / Fax: +91-80-4020-1699

India Chennai FA Center

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Chennai Branch
Tel: +91-4445548772 / Fax: +91-4445548773

India Gurgaon FA Center

MITSUBISHI ELECTRIC INDIA PVT. LTD.
Gurgaon Head Office
Tel: +91-124-463-0300 / Fax: +91-124-463-0399

India Pune FA Center

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Tel: +91-20-2710-2000 / Fax: +91-20-2710-2100

■ Americas

USA

North America FA Center

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Tel: +1-847-478-2469 / Fax: +1-847-478-2253

Mexico

Mexico City FA Center

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Tel: +52-55-3067-7511

Mexico FA Center

MITSUBISHI ELECTRIC AUTOMATION, INC.
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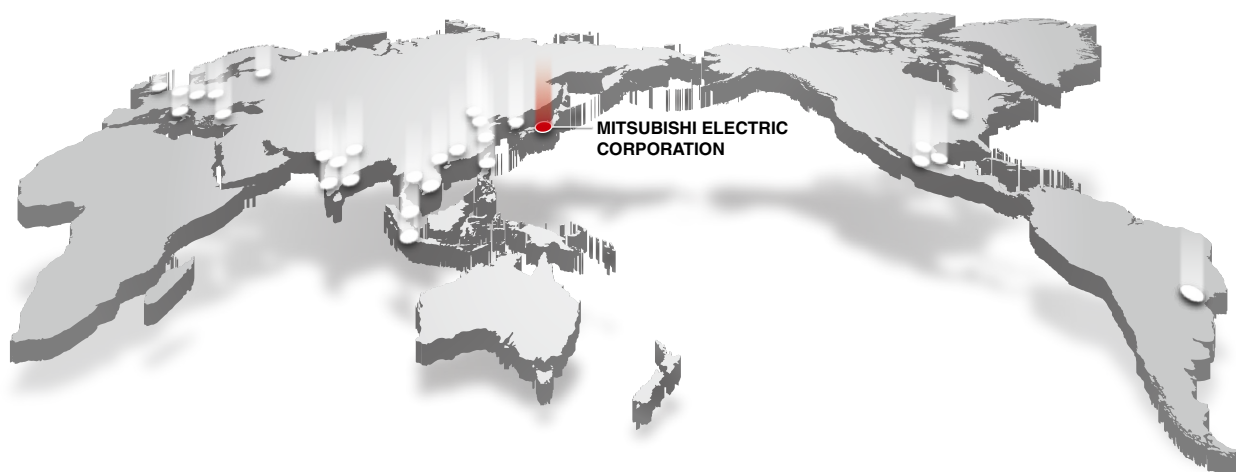
Mexico Monterrey FA Center

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Monterrey Office
Tel: +52-55-3067-7521

Brazil

Brazil FA Center

MITSUBISHI ELECTRIC DO BRASIL COMERCIO E
SERVICOS LTDA.
Tel: +55-11-4689-3000 / Fax: +55-11-4689-3016



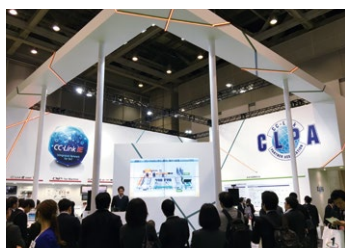
CC-Link Partner Association (CLPA) - Actively promoting worldwide adoption of CC-Link networks

Proactively supporting CC-Link, from promotion to specification development

The CC-Link Partner Association (CLPA) was established to promote the worldwide adoption of the CC-Link open-field network. By conducting promotional activities such as organizing trade shows and seminars, conducting conformance tests, and providing catalogs, brochures and website information, CLPA activities are successfully increasing the number of CC-Link partner manufacturers and CC-Link-compatible products. As such, CLPA is playing a major role in the globalization of CC-Link.



Seminar



Trade show



Conformance testing lab

Visit the CLPA website for the latest CC-Link information.

URL: www.cc-link.org

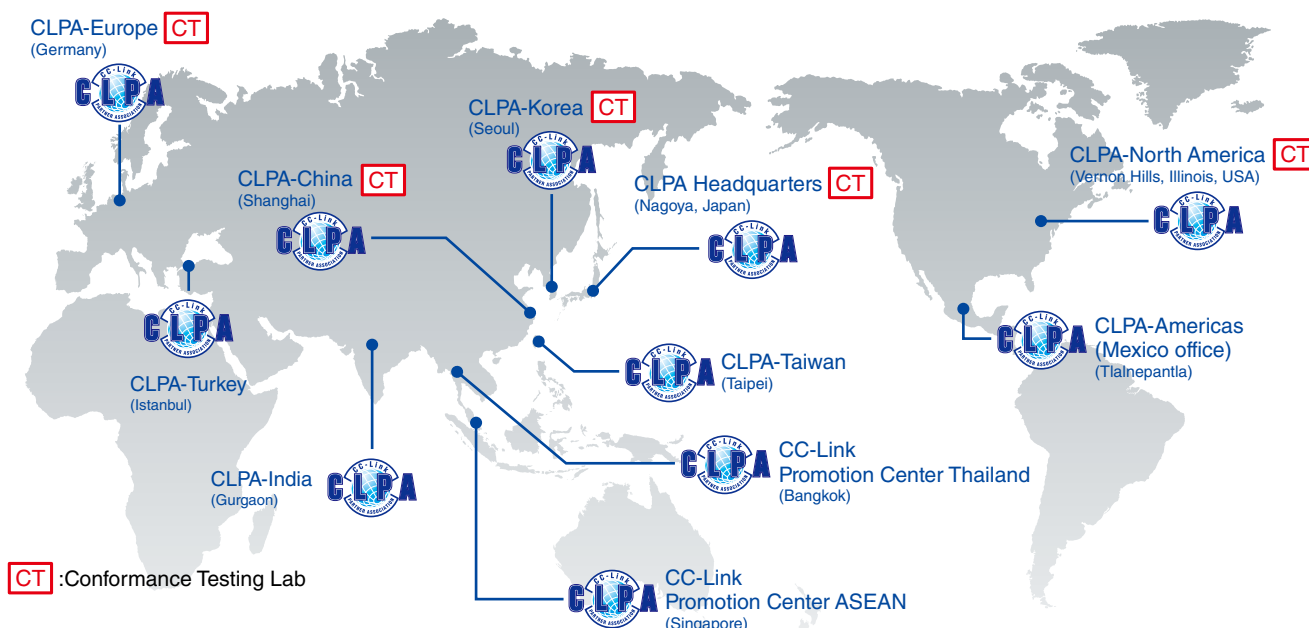


CLPA Headquarters
6F Ozone Front Bldg. 3-15-58 Ozone
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TEL: +81-52-919-1588 FAX: +81-52-916-8655
E-mail: info@cc-link.org



Global influence of CC-Link continues to spread

CC-Link is supported globally by CLPA. With offices throughout the world, support for partner companies can be found locally. Each regional CLPA office undertakes various support and promotional activities to further the influence of CC-Link/CC-Link IE in that part of the world. For companies looking to increase their presence in their local area, CLPA is well placed to assist these efforts through offices in all major regions.



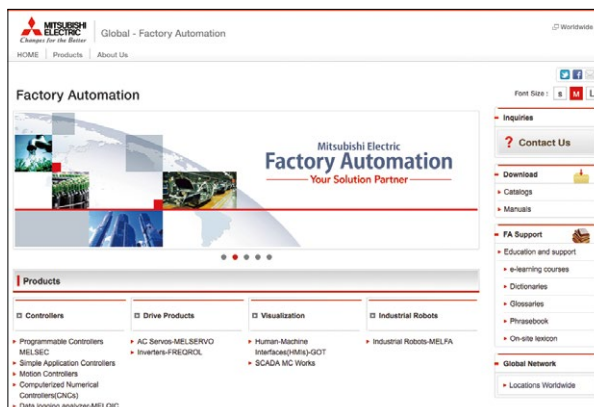
Factory Automation Global website

Mitsubishi Electric Factory Automation provides a mix of services to support its customers worldwide. A consolidated global website is the main portal, offering a selection of support tools and a window to its local Mitsubishi Electric sales and support network.

■ From here you can find:

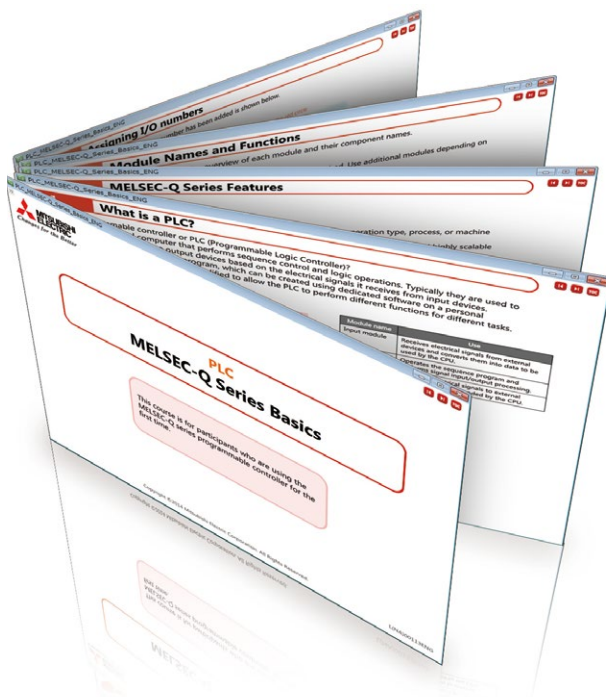
- Overview of available factory automation products
- Library of downloadable literature
- Support tools such as online e-learning courses, terminology dictionary, etc.
- Global sales and service network portal
- Latest news related to Mitsubishi Electric factory automation

Mitsubishi Electric Factory Automation
Global website:
www.MitsubishiElectric.com/fa



Online e-learning

An extensive library of e-learning courses covering the factory automation product range has been prepared. Courses from beginner to advanced levels of difficulty are available in various languages.



■ Beginner level

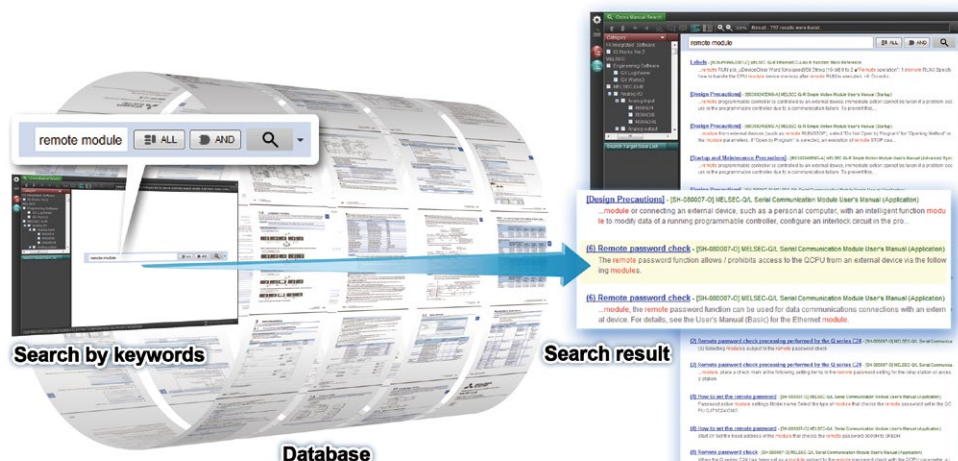
Designed for newcomers to Mitsubishi Electric Factory Automation products gaining a background of the fundamentals and an overview of various products related to the course.

■ Basic to Advanced levels

These courses are designed to provide education at all levels. Various different features are explained with application examples providing an easy and informative resource for in-house company training.

Innovative next-generation, e-Manual

The e-Manual viewer is a next-generation digital manual offered by Mitsubishi Electric that consolidates all manuals into an easy-to-use package with various useful features integrated into the viewer. The e-Manual is modeled around a centralized database allowing multiple manuals to be cross-searched at once, further reducing the time for reading individual product manuals when setting up a control system.



Key features include

- One-stop database containing all required manuals, with local file cache
- Included with GX Works3 engineering software
- Also available in tablet version
- Easily download manuals all at once
- Automatic update of manual versions
- Search information across multiple manuals
- Visual navigation from hardware diagram showing various specifications
- Customizable by adding user notes and bookmarks
- Directly port sample programs within manuals to GX Works3

MITSUBISHI ELECTRIC FA e-Manual (tablet version)



The e-Manual application is available on iOS and Android™ tablets. e-Manual files are provided as in-app downloads.



iOS
Version 8.1 or later

Download on the
App Store



Android™
Version 4.3/4.4/5.0

GET IT ON
Google Play

Supported versions

OS	OS version	Model
iOS	iOS 8.1 or later	Apple iPad 2, iPad (3rd generation), iPad (4th generation), iPad Air, iPad Air 2, iPad mini, iPad mini 2, iPad mini 3, iPad mini 4, iPad Pro (12.9 inch), iPad Pro (9.7 inch)
Android™	Android™ 4.3/4.4/5.0	ASUS Nexus7™ (2013)*1

*1. When using a tablet not listed above, 7-inch (resolution of 1920 x 1200 dots (WUXGA)) or better is recommended.

Product list

Mitsubishi Electric Corporation



...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

[Legend] **DB** Double brand product

Type	Model	Outline			
CC-Link IE embedded CPU module					
R04ENCPU	MELSEC iQ-R Series CC-Link IE Field Network master/local station CC-Link IE Control Network control/normal station		●	●	-
R08ENCPU	MELSEC iQ-R Series CC-Link IE Field Network master/local station CC-Link IE Control Network control/normal station		●	●	-
R16ENCPU	MELSEC iQ-R Series CC-Link IE Field Network master/local station CC-Link IE Control Network control/normal station		●	●	-
R32ENCPU	MELSEC iQ-R Series CC-Link IE Field Network master/local station CC-Link IE Control Network control/normal station		●	●	-
R120ENCPU	MELSEC iQ-R Series CC-Link IE Field Network master/local station CC-Link IE Control Network control/normal station		●	●	-
Multi-network supporting Ethernet module					
RJ71EN71	MELSEC iQ-R Series multi-network supported (Ethernet/CC-Link IE)		●	●	-
Master/local module					
RJ71GF11-T2	CC-Link IE Field Network master/local station for MELSEC iQ-R Series		●	-	-
QJ71GF11-T2	CC-Link IE Field Network master/local station for MELSEC-Q Series		●	-	-
LJ71GF11-T2	CC-Link IE Field Network master/local station for MELSEC-L Series		●	-	-
QS0J71GF11-T2	CC-Link IE Field Network safety master/local station for MELSEC-QS Series		●	-	-
Control network module					
RJ71GP21-SX	CC-Link IE Control Network control/normal station for MELSEC iQ-R Series		-	-	●
RJ71GP21S-SX	CC-Link IE Control Network control/normal station (with the External power supply function) for MELSEC iQ-R Series		-	-	●
QJ71GP21-SX	CC-Link IE Control Network control/normal station for MELSEC-Q Series		-	-	●
QJ71GP21S-SX	CC-Link IE Control Network control/normal station (with the External power supply function) for MELSEC-Q Series		-	-	●
Simple motion module					
RD77GF4	CC-Link IE Field Network master station for MELSEC iQ-R Series Up to 4-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
RD77GF8	CC-Link IE Field Network master station for MELSEC iQ-R Series Up to 8-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
RD77GF16	CC-Link IE Field Network master station for MELSEC iQ-R Series Up to 16-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
RD77GF32	CC-Link IE Field Network master station for MELSEC iQ-R Series Up to 32-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
QD77GF4	CC-Link IE Field Network master station for MELSEC-Q Series Up to 4-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
QD77GF8	CC-Link IE Field Network master station for MELSEC-Q Series Up to 8-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
QD77GF16	CC-Link IE Field Network master station for MELSEC-Q Series Up to 16-axis control, linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control		●	-	-
Head module					
RJ72GF15-T2	MELSEC iQ-R Series CC-Link IE Field Network compatible remote head module		●	-	-
LJ72GF15-T2	MELSEC-L Series CC-Link IE Field Network compatible head module (END cover enclosed)		●	-	-
Intelligent device station module					
FX5-CCLIEF	MELSEC iQ-F Series CC-Link IE Field Network intelligent device station module		●	-	-
AC Servo MELSERVO-J4 Series					
MR-J4-GF(-RJ)	CC-Link IE Field Network compatible servo amplifier		●	-	-
Inverter FREQROL-A800 Series					
FR-A800-GF	CC-Link IE Field Network compatible inverter		●	-	-
HMI GOT2000 Series					
GT27□□-□□□□-GF	Product package including a GOT (GT27□□-□□□□) and a CC-Link IE Field Network communication unit (GT15-J71GF13-T2).		●	-	-
GT25□□-□□□□-GF	Product package including a GOT (GT25□□-□□□□) and a CC-Link IE Field Network communication unit (GT15-J71GF13-T2)		●	-	-
GT15-J71GF13-T2	CC-Link IE Field Network communication unit, supported by GT27 and GT25		●	-	-
GT15-J71GP23-SX	CC-Link IE Control Network communication unit, supported by GT27 and GT25		-	-	●
Ethernet adapter module					
NZ2GF-ETB	Compatible with Ethernet devices, transmission rate 100 Mbps/1 Gbps		●	-	-
Network bridge module					
NZ2GF-CCB	CC-Link IE Field Network - CC-Link bridge module		●	-	-
NZ2AW1GFAL DB	CC-Link IE Field Network - AnyWireASLINK bridge module		●	-	-

Mitsubishi Electric Corporation



...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

Type	Model	Outline			
Block type remote module					
DC input	NZ2GF2S1-16D	16 points, 24 V DC, response time 0...70 ms, positive/negative common shared, spring clamp terminal block, 1-wire	●	-	-
	NZ2GF2B1N1-16D	16 points, 24 V DC, response time 0...70 ms, positive/negative common shared, screw terminal block, 1-wire, max. extension modules: 3	●	-	-
	NZ2GF2B1-32D	32 points, 24 V DC, response time 0...70 ms, positive/negative common shared, screw terminal block, 1-wire	●	-	-
	NZ2GFCE3-16D*1*2	16 points, 24 V DC, response time 0...70 ms, positive common (sink type), sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCE3-16DE*1*2	16 points, 24 V DC, response time 0...70 ms, negative common (source type), sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCE3N-32D	32 points, 24 V DC, response time 0...70 ms, positive common (sink type), sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCM1-16D*1	16 points, 24 V DC, response time 0...70 ms, positive common (sink type), MIL connector (20 pin), 1-wire	●	-	-
	NZ2GFCM1-16DE*1	16 points, 24 V DC, response time 0...70 ms, negative common (source type), MIL connector (20 pin), 1-wire	●	-	-
	NZ2GFCF1-32D	32 points, 24 V DC, response time 0...70 ms, positive/negative common shared, 40-pin connector, 1-wire	●	-	-
AC input	NZ2GF2S2-16A	16 points, 100...120 V AC, 50/60 Hz, spring clamp terminal block, 2-wire	●	-	-
	NZ2GF2B2-16A	16 points, 100...120 V AC, 50/60 Hz, screw terminal block, 2-wire	●	-	-
Transistor output	NZ2GF2S1-16T	16 points, 12/24 V DC (0.5 A), sink type, spring clamp terminal block, 1-wire	●	-	-
	NZ2GF2S1-16TE	16 points, 12/24 V DC (0.5 A), source type, spring clamp terminal block, 1-wire	●	-	-
	NZ2GF2B1N1-16T	16 points, 12/24 V DC (0.5 A), sink type, screw terminal block, 1-wire max. extension modules: 3	●	-	-
	NZ2GF2B1N1-16TE	16 points, 12/24 V DC (0.5 A), sink type, screw terminal block, 1-wire max. extension modules: 3	●	-	-
	NZ2GF2B1-32T	32 points, 12/24 V DC (0.5 A), sink type, screw terminal block, 1-wire	●	-	-
	NZ2GF2B1-32TE	32 points, 12/24 V DC (0.5 A), source type, screw terminal block, 1-wire	●	-	-
	NZ2GFCE3-16T*1*2	16 points, 12/24 V DC (0.5 A), sink type, sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCE3-16TE*1*2	16 points, 12/24 V DC (0.5 A), source type, sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCE3N-32T	32 points, 12/24 V DC (0.5 A), sink type, sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCM1-16T*1	16 points, 12/24 V DC (0.5 A), sink type, MIL connector (20 pin), 1-wire	●	-	-
Contact output	NZ2GF2S2-16R	16 points, 24 V DC/240 V AC (2 A), spring clamp terminal block, 2-wire	●	-	-
	NZ2GF2B2-16R	16 points, 24 V DC/240 V AC (2 A), screw terminal block, 2-wire	●	-	-
Triac output	NZ2GF2S2-16S	16 points, 100...240 V AC, 50/60 Hz (0.6 A), spring clamp terminal block, 2-wire	●	-	-
	NZ2GF2B2-16S	16 points, 100...240 V AC, 50/60 Hz (0.6 A), screw terminal block, 2-wire	●	-	-
I/O combined	NZ2GF2B1-32DT	Input 16 points, 24 V DC, response time 0...70 ms, positive common Output 16 points, 24 V DC (0.5 A), sink type screw terminal block, 1-wire	●	-	-
	NZ2GF2B1-32DTE	Input 16 points, 24 V DC, response time 0...70 ms, negative common Output 16 points, 24 V DC (0.5 A), source type screw terminal block, 1-wire	●	-	-
	NZ2GFCE3N-32DT	Input 16 points, 24 V DC, response time 0...70 ms, positive common (sink type) Output 16 points, 24 V DC (0.5 A), sink type, sensor connector (e-CON), 3-wire	●	-	-
	NZ2GFCF1-32DT	Input 16 points, 24 V DC, response time 0...70 ms, positive/negative common shared Output 16 points, 12/24 V DC (0.1 A), sink type, 40-pin connector, 1-wire	●	-	-
Multiple input	NZ2GF2S-60MD4	4 channels, analog voltage/current/temperature input, spring clamp terminal block	●	-	-
Analog input	NZ2GF2BN-60AD4	4 channels, -10...10 V DC, 0...20 mA DC; conversion speed, 100 μs/ch; screw terminal block	●	-	-
	NZ2GFCE-60ADV8	8 channels, -10...10 V DC; conversion speed, 1 ms/ch; sensor connector (e-CON)	●	-	-
	NZ2GFCE-60ADI8	8 channels, 0...20 mA DC; conversion speed, 1 ms/ch; sensor connector (e-CON)	●	-	-
Analog output	NZ2GF2BN-60DA4	4 channels, -10...10 V DC, 0...20 mA DC; conversion speed, 100 μs/ch; screw terminal block	●	-	-
	NZ2GFCE-60DAV8	8 channels, -10...10 V DC; conversion speed, 1 ms/ch; sensor connector (e-CON)	●	-	-
	NZ2GFCE-60DAI8	8 channels, 0...20 mA DC; conversion speed, 1 ms/ch; sensor connector (e-CON)	●	-	-

*1. A connector for the power supply and FG is required with e-CON and MIL connector type remote I/O module. Please refer to the option list on P.73 to check the type and model name.

*2. A sensor connector is required with e-CON connector type remote I/O module. Please refer to the option list of Mitsubishi Electric System & Service Co., Ltd. products on P.73 to check the type and model name.

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Mitsubishi Electric Corporation



...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

[Legend] DB : Double brand product*

			Legend			DB Double brand product		
Type	Model	Outline						
Block type remote module								
Temperature control	NZ2GF2B-60TCTT4	4 channels, thermocouple input, transistor output, screw terminal block	●	-	-			
	NZ2GF2B-60TCRT4	4 channels, RTD input, transistor output, screw terminal block	●	-	-			
High-speed counter	NZ2GFCF-D62PD2	2 channels Differential input Counting speed, 10 kpps/100 kpps/200 kpps/500 kpps/1 Mpps/2 Mpps/4 Mpps/8 Mpps; count input signal, EIA Standard RS-422-A (Differential line driver) DC input Counting speed, 10 kpps/100 kpps/200 kpps; count input signal, 5/24 V DC 4...8 mA; coincidence output, transistor (sink type); 5...24 V DC (0.1 A); 40-pin connector	●	-	-			
Extension module for Block type remote module								
DC input	NZ2EX2S1-16D	16 points, 24 V DC, response time 0...70 ms, positive/negative common shared, spring clamp terminal block, 1-wire	●	-	-			
	NZ2EX2B1N-16D	16 points, 24 V DC, response time 0...70 ms, positive/negative common shared, screw terminal block, 1-wire, multiple modules connectable	●	-	-			
Transistor output	NZ2EX2S1-16T	16 points, 12/24 V DC (0.5 A), sink type, spring clamp terminal block, 1-wire	●	-	-			
	NZ2EX2S1-16TE	16 points, 12/24 V DC (0.5 A), source type, spring clamp terminal block, 1-wire	●	-	-			
	NZ2EX2B1N-16T	16 points, 12/24 V DC (0.5 A), sink type, screw terminal block, 1-wire, multiple modules connectable	●	-	-			
	NZ2EX2B1N-16TE	16 points, 12/24 V DC (0.5 A), source type, screw terminal block, 1-wire, multiple modules connectable	●	-	-			
Analog input	NZ2EX2B-60AD4	4 channels, Input: -10...10 V DC, 0...20 mA DC, Conversion speed: 100 μs/ch, screw terminal block	●	-	-			
Analog output	NZ2EX2B-60DA4	4 channels, Output: -10...10 V DC, 0...20 mA DC, Conversion speed: 100 μs/ch, screw terminal block	●	-	-			
Waterproof/dustproof type (IP67) remote module								
DC input	NZ2GF12A4-16D DB	16 points, 24 V DC, response time 0...70 ms, positive common, waterproof connector, 2...4-wire	●	-	-			
	NZ2GF12A4-16DE DB	16 points, 24 V DC, response time 0...70 ms, negative common, waterproof connector, 2...4-wire	●	-	-			
Transistor output	NZ2GF12A2-16T DB	16 points, 12/24 V DC (2 A), sink type, waterproof connector, 2-wire	●	-	-			
	NZ2GF12A2-16TE DB	16 points, 12/24 V DC (2 A), source type, waterproof connector, 2-wire	●	-	-			
I/O combined	NZ2GF12A42-16DT DB	Input 8 points, 24 V DC, response time 0...70 ms, positive common, 2...4-wire Output 8 points, 12/24V DC (2 A), sink type, 2-wire waterproof connector	●	-	-			
	NZ2GF12A42-16DTE DB	Input 8 points, 24 V DC, response time 0...70 ms, negative common, 2...4-wire Output 8 points, 12/24 V DC (2 A), source type, 2-wire waterproof connector	●	-	-			

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...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

[Legend] DB : Double brand product

Type	Model	Outline			
Safety remote I/O module					
Main safety input	NZ2GFSS2-8D	8 points with single wiring/4 points with double wiring, 24 V DC, response time 0.4 ms, negative common, spring clamp terminal block, 2-wire	●	-	-
	NZ2GFSS2-32D	32 points with single wiring/16 points with double wiring, 24 V DC, response time 0.4 ms, negative common, spring clamp terminal block, 2-wire	●	-	-
Main safety output	NZ2GFSS2-8TE	8 points with single wiring/4 points with double wiring, 24 V DC (0.5 A), source + source type, spring clamp terminal block, 2-wire	●	-	-
Main safety I/O combined	NZ2GFSS2-16DTE	Input 8 points with single wiring/4 points with double wiring, 24 V DC, response time 0...70 ms, negative common Output 8 points with single wiring/4 points with double wiring, 24 V DC (0.5 A), source + source type spring clamp terminal block, 2-wire	●	-	-
Extension safety output	NZ2EXSS2-8TE	8 points with single wiring/4 points with double wiring, 24 V DC (0.5 A), source + source type, spring clamp terminal block, 2-wire	●	-	-
Waterproof/ dustproof type (IP67) main safety I/O combined	NZ2GFS12A2-14DT NEW DB	Input 12 points with single wiring/6 points with double wiring, 24 V DC, negative common Output single wiring not possible/2 points with double wiring, 24 V DC (2.0 A), source + sink type waterproof connector, 2-wire	●	-	-
	NZ2GFS12A2-16DTE NEW DB	Input 12 points with single wiring/6 points with double wiring, 24 V DC, negative common Output 4 points with single wiring/2 points with double wiring, 24 V DC (1.0 A), source + source type waterproof connector, 2-wire	●	-	-
Remote IO-Link					
	NZ2GF2S-60IOLD8	Number of IO-Link channels: 8 ch, 24 V DC, spring clamp terminal block	●	-	-
	NZ2GF12A-60IOLH8 DB	Number of IO-Link channels: 8 ch, 24 V DC, waterproof connector	●	-	-
Network interface board					
	Q81BD-J71GF11-T2	CC-Link IE Field Network master/local station, compatible with PCI Express® bus	●	-	-
	Q80BD-J71GF11-T2	CC-Link IE Field Network master/local station, compatible with PCI/PCI-X bus	●	-	-
	Q81BD-J71GP21-SX	CC-Link IE Control Network control/normal station, compatible with PCI Express® bus	-	-	●
	Q81BD-J71GP21S-SX	CC-Link IE Control Network control/normal station (with the External power supply function), compatible with PCI Express® bus	-	-	●
	Q80BD-J71GP21-SX	CC-Link IE Control Network control/normal station, compatible with PCI/PCI-X bus	-	-	●
	Q80BD-J71GP21S-SX	CC-Link IE Control Network control/normal station (with the External power supply function), compatible with PCI/PCI-X bus	-	-	●
	MR-EM340GF	PCI Express® bus type CC-Link IE Field Network simple motion board max. control axis:16 linear interpolation, 2-axis circular interpolation, synchronous control, speed-torque control	●	-	-

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CC-Link IE Field Network Basic compatible products

Type	Model	Outline
CC-Link IE Field Network Basic embedded CPU modules		
R□□CPU		MELSEC iQ-R Series CPU module master station
R□□ENCPU		MELSEC iQ-R Series CC-Link IE embedded CPU module master station
R12CCPU-V		MELSEC iQ-R Series C Controller module master station
Q□□UDVCPU		MELSEC-Q Series High-speed Universal model QCPU module master station
L□□CPU (-P/-BT/-PBT)		MELSEC-L Series CPU module master station
FX5U-□□□□/□□□		MELSEC iQ-F Series FX5U CPU module master station
FX5UC-□□□□/□□□		MELSEC iQ-F Series FX5UC CPU module master station
FX5-ENET NEW		MELSEC iQ-F Series Ethernet module master station
MI5122-VW		MELIPC MI5000 Series master station
Inverters		
FR-A800-E		FREQROL-A800 Series Inverter slave station
FR-A800-E-CRN		FREQROL-A800 Plus for CRANES Inverter slave station
FR-F800-E		FREQROL-F800 Series Inverter slave station
FR-E700-NE		FREQROL-E700 Series Inverter slave station
AC servos		
MR-J4-GF(-RJ)		MELSERVO-J4 Series Servo amplifier slave station
MR-JE-C		MELSERVO-JE Series Servo slave station
Industrial robots		
RV-□□FR		MELFA FR Series Robot vertical, multiple-joint type slave station
RH-□□FRH		MELFA FR Series Robot horizontal, multiple-joint type slave station
HMI GOT2000 Series		
GT27□□-□□□□		GT27 model slave station
GT25□□□□-□□□□		GT25 model slave station
GT210□-□□□□D		GT21 model slave station
Energy measuring units		
EMU4-□□D1-MB		EcoMonitorLight slave station
EMU4-□□1-MB		EcoMonitorPlus slave station
EMU4-CM-CIFB		CC-Link IE Field Network Basic Communication Unit (EcoMonitorLight/Plus)
Block type remote modules		
DC input	NZ2MF2S1-32D	32 points, 24 V DC, response time 0...70 ms, positive/negative common shared, spring clamp terminal block, 1-wire
	NZ2MFB1-32D	32 points, 24 V DC, response time 0...70 ms, positive/negative common shared, screw terminal block, 1-wire
AC input	NZ2MFB2-16A	16 points, 100...120 V AC, 50/60 Hz, screw terminal block, 2-wire
Transistor output	NZ2MF2S1-32T	32 points, 12/24 V DC (0.5 A), sink type, spring clamp terminal block, 1-wire
	NZ2MF2S1-32TE1	32 points, 12/24 V DC (0.1 A), source type, spring clamp terminal block, 1-wire
	NZ2MFB1-32T	32 points, 12/24 V DC (0.5 A), sink type, screw terminal block, 1-wire
	NZ2MFB1-32TE1	32 points, 12/24 V DC (0.1 A), source type, screw terminal block, 1-wire
Contact output	NZ2MFB2-16R	16 points, 24 V DC/240 V AC (2 A), screw terminal block, 2-wire
I/O combined	NZ2MF2S1-32DT	Input 16 points, 24 V DC, response time 0...70 ms, positive common Output 16 points, 24 V DC (0.5 A), sink type spring clamp terminal block, 1-wire
	NZ2MF2S1-32DTE1	Input 16 points, 24 V DC, response time 0...70 ms, negative common Output 16 points, 24 V DC (0.1 A), source type spring clamp terminal block, 1-wire
	NZ2MFB1-32DT	Input 16 points, 24 V DC, response time 0...70 ms, positive common Output 16 points, 24 V DC (0.5 A), sink type screw terminal block, 1-wire
	NZ2MFB1-32DTE1	Input 16 points, 24 V DC, response time 0...70 ms, negative common Output 16 points, 24 V DC (0.1 A), source type screw terminal block, 1-wire

Option list

Mitsubishi Electric Corporation



...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

[Legend] DB: Double brand product*

Type	Model	Outline			
Industrial switching hub					
NZ2EHG-T8N	DB	10 Mbps/100 Mbps/1 Gbps, Auto MDI/MDI-X, DIN rail, 8 ports	●	●	-
Managed CC-Link IE switch					
NZ2MHG-T8F2		10 Mbps/100 Mbps/1 Gbps, DIN rail, 8 ports (including 2 fiber-optic compatible ports), CC-Link IE and Ethernet mix, ERP, LA, VLAN, and SNMP functions supported	●	●	-
Block type remote module/One touch connector plug for power supply and FG					
A6CON-PW5P (35505-6080-A00 GF*)		Core wire size of applicable cable: 0.75 mm ² (0.66...0.98 mm ²) (18 AWG), 0.16 mm or larger for strand diameter, insulating coating material PVC (heat resistant vinyl) Outer diameter of applicable cable: ø2.2...3.0 mm, maximum rated current 7A*, 10 pieces	●	-	-
A6CON-PW5P-SOD (35505-6180-A00 GF*)		Core wire size of applicable cable: 0.75 mm ² (0.66...0.98 mm ²) (18 AWG), 0.16 mm or larger for strand diameter, insulating coating material PVC (heat resistant vinyl) Outer diameter of applicable cable: ø2.0...2.3 mm, maximum rated current: 7A*, 10 pieces	●	-	-
Block type remote module/Online connector plug for power supply and FG					
A6CON-PWJ5P (35720-L200-A00 AK*)		Online connector plug for the power supply and FG, 5 pieces	●	-	-
40-pin connector					
A6CON1		Soldering connector (straight out type)	●	-	-
A6CON2		Crimp connector (straight out type)	●	-	-
A6CON3		Pressure-displacement connector (straight out type)	●	-	-
A6CON4		Soldering connector (both for straight out and 45-degree type)	●	-	-

*1. Model name by the plug manufacturer 3M.

*2. The allowable current value of the cable connected must be observed.

Mitsubishi Electric System & Service Co., Ltd.



...CC-Link IE Field Network



...CC-Link IE Control Network twisted-pair cable



...CC-Link IE Control Network optical cable

Type	Model	Outline			
Industrial switching hub					
DT135TX		10 Mbps/100 Mbps/1000 Mbps, Auto MDI/MDI-X, DIN rail, 5 ports	●	●	-
DT125TX-B		10 Mbps/100 Mbps, Auto MDI/MDI-X, DIN rail, 5 ports	● ^{*3}	-	-
Cable/accessory					
SC-E5EW-S□M		(Double shielded/STP) straight cable, Category 5e, for indoor use	●	●	-
SC-E5EW-S□M-MV		(Double shielded/STP) straight cable, Category 5e, for indoor movable part	●	●	-
SC-E5EW-S□M-L		(Double shielded/STP) straight cable, Category 5e, for indoor/outdoor use	●	●	-
SPAD-RJ45S-E5E		RJ-45 connector with shield	●	●	-
QP-AW		Optical fiber cable compatible with CC-Link IE Control Network (in the control panel, short distance)	-	-	●
QG-AW		Optical fiber cable compatible with CC-Link IE Control Network (in the control panel)	-	-	●
QG-B		Optical fiber cable compatible with CC-Link IE Control Network (indoor)	-	-	●
QG-BU		UL optical fiber cable compatible with CC-Link IE Control Network (indoor)	-	-	●
QG-C		Optical fiber cable compatible with CC-Link IE Control Network (outdoor)	-	-	●
QG-DL		Optical fiber cable compatible with CC-Link IE Control Network (outdoor, reinforced)	-	-	●
QG-VCT		Optical fiber cable compatible with CC-Link IE Control Network (indoor, movable use)	-	-	●
SPAD-LCF-G50		Splice adapter for LCF connector, multimode 2 cores, connection loss 0.3 dB (with master fiber)	-	-	●
SPAD-SCF-G50		Splice adapter for SC connector, multimode 2 cores, connection loss 0.3 dB (with master fiber)	-	-	●
SPAD-FC-G50		Splice adapter for FC connector, multimode 1 core, connection loss 0.3 dB (with master fiber)	-	-	●
SCT-SLM		Connector insertion tool (applicable connector: LCF connector, LC connector, SC connector, MU connector)	-	-	●
Industrial media converter					
DMC-1000TS-DC		Industrial media converter compatible with CC-Link IE Control Network	●	●	-
DMC-1000SL-DC		Industrial media converter compatible with CC-Link IE Control Network	-	-	●
Connection terminal					
SC-ECT-P3		Cable bundling device compatible with CC-Link IE Control Network	-	-	●
Sensor connector (e-CON) for Block type remote module					
ECN-M014R		Core wire size of applicable cable: 0.14...0.30 mm ² (26...24 AWG) Outer diameter of applicable cable: ø0.8...1.0 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-
ECN-M024Y		Core wire size of applicable cable: 0.14...0.30 mm ² (26...24 AWG) Outer diameter of applicable cable: ø1.0...1.2 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-
ECN-M034OR		Core wire size of applicable cable: 0.14...0.30 mm ² (26...24 AWG) Outer diameter of applicable cable: ø1.2...1.6 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-
ECN-M044GN		Core wire size of applicable cable: 0.30...0.50 mm ² (22...20 AWG) Outer diameter of applicable cable: ø1.0...1.2 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-
ECN-M054BL		Core wire size of applicable cable: 0.30...0.50 mm ² (22...20 AWG) Outer diameter of applicable cable: ø1.2...1.6 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-
ECN-M064GY		Core wire size of applicable cable: 0.30...0.50 mm ² (22...20 AWG) Outer diameter of applicable cable: ø1.6...2.0 mm, Maximum rated current: 2.0 A, 20 pieces	●	-	-

*3. Supports only CC-Link IE Field Network Basic.

For details of Mitsubishi Electric System & Service Co., Ltd. products, please contact by sending an e-mail to the following address.

<Sales office> FA PRODUCT DIVISION mail:osb.webmaster@melsc.jp



* General specifications and product guarantee conditions of jointly developed products are different from those of MELSEC products.
For further details, please refer to the product manuals, or contact your local Mitsubishi Electric sales representative.

Compliance with international quality assurance standards

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Safety Standards

	CE : Council Directive of the European Communities		UL : Underwriters Laboratories Listing
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Shipping Standards

LR : Lloyd's Register of Shipping approval	DNV GL : DNV GL AS approval	RINA : Italian Maritime approval
NK : ClassNK approval	ABS : American Bureau of Shipping approval	BV : Bureau Veritas approval

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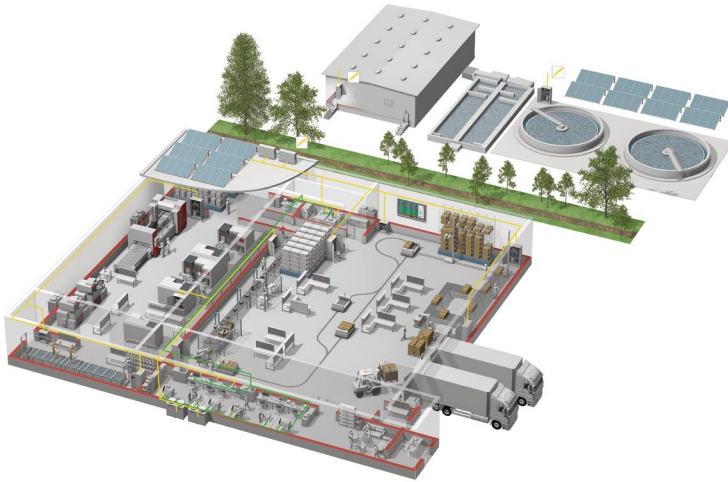
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Mitsubishi Electric offers a wide range of automation equipment from PLCs and HMIs to CNC and EDM machines.

A NAME TO TRUST

Since its beginnings in 1870, some 45 companies use the Mitsubishi name, covering a spectrum of finance, commerce and industry.

The Mitsubishi brand name is recognized around the world as a symbol of premium quality.

Mitsubishi Electric Corporation is active in space development, transportation, semi-conductors, energy systems, communications and information processing, audio visual equipment and home electronics, building and energy management and automation systems, and has 237 factories and laboratories worldwide in over 121 countries.

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Low voltage: MCCB, MCB, ACB



Medium voltage: VCB, VCC



Power monitoring, energy management



Compact and Modular Controllers



Inverters, Servos and Motors



Visualisation: HMIs



Numerical Control (NC)



Robots: SCARA, Articulated arm



Processing machines: EDM, Lasers, IDS

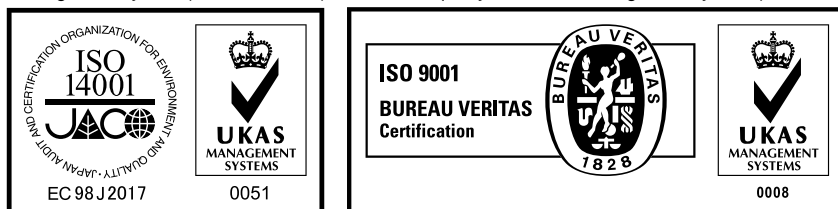


Transformers, Air conditioning, Photovoltaic systems

* Not all products are available in all countries.

Country/Region	Sales office	Tel/Fax
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Brazil	MITSUBISHI ELECTRIC DO BRASIL COMERCIO E SERVICOS LTDA. Avenida Adelino Cardana, 293, 21 andar, Bethaville, Barueri SP, Brasil	Tel : +55-11-4689-3000 Fax : +55-11-4689-3016
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Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO 14001 (standards for environmental management systems) and ISO 9001 (standards for quality assurance management systems).



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