

## Open Field Network CC-Link Compatible Product Catalog

CC-Link

CC-Link/LT

CC-Link Safety

# Strategic Network, CC-Link, CC-Link/LT & CC-Link Safety

Strong Manufacturers  
Stay One Step Ahead of Others with  
CC-Link, CC-Link/LT & CC-Link Safety





Connect with reliable networks  
for powerful factory automation

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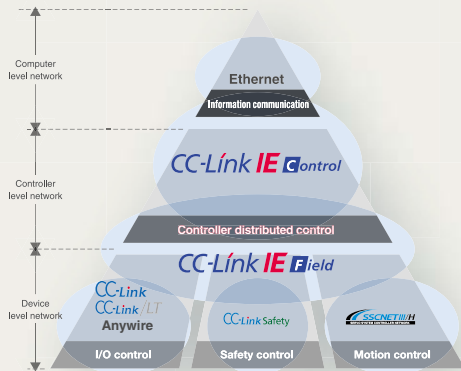
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# Shaping the future of factory automation networks with the

We provide total support in creating seamless networks in all scenes, from offices to production sites, under a consistent design philosophy. With flexible approaches backed by "Ethernet," "MELSECNET/H" and "CC-Link", a SEMI-certified, world standard field network originated in Japan, and "CC-Link/LT", a sensor level network adhering to the design concept of CC-Link, we propose a network-based automation environment, fit for your needs.

## Seamless integration of the network over all layers



[Within line]  
Device level network

**CC-Link**

CC-Link is a high-speed and high-reliable deterministic I/O control network which realizes reduced wiring whilst offering multi-vendor compatible products. This open field network is a global standard originating from Japan and Asia.

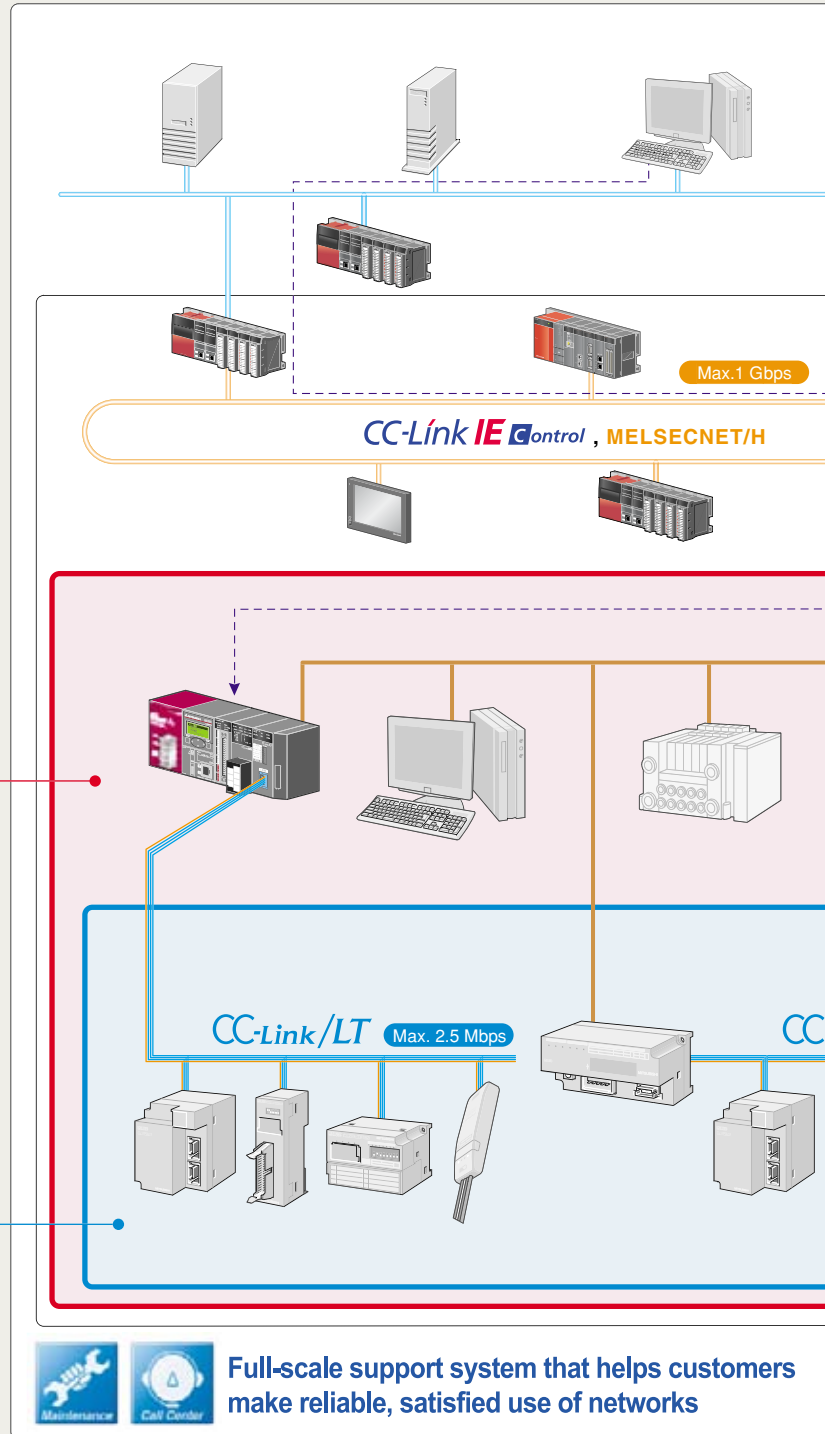
- High-speed communication at a maximum baud rate of 10 Mbps
- Remote input/output (RX, RY): 8,192 points each  
Remote register (RWw) : 2,048 words  
(RWr) : 2,048 words  
(when CC-Link Ver. 2.0 is used)
- Integration with 3rd party manufacture products

[Within panel and devices]  
Sensor level network

**CC-Link/LT**

CC-Link/LT is a wire-saving sensor level network which is designed for use in panels between simple discrete devices. Its wiring system is based on reducing incorrect wiring and is based on CC-Link realizing high-speed and robust noise resistance features.

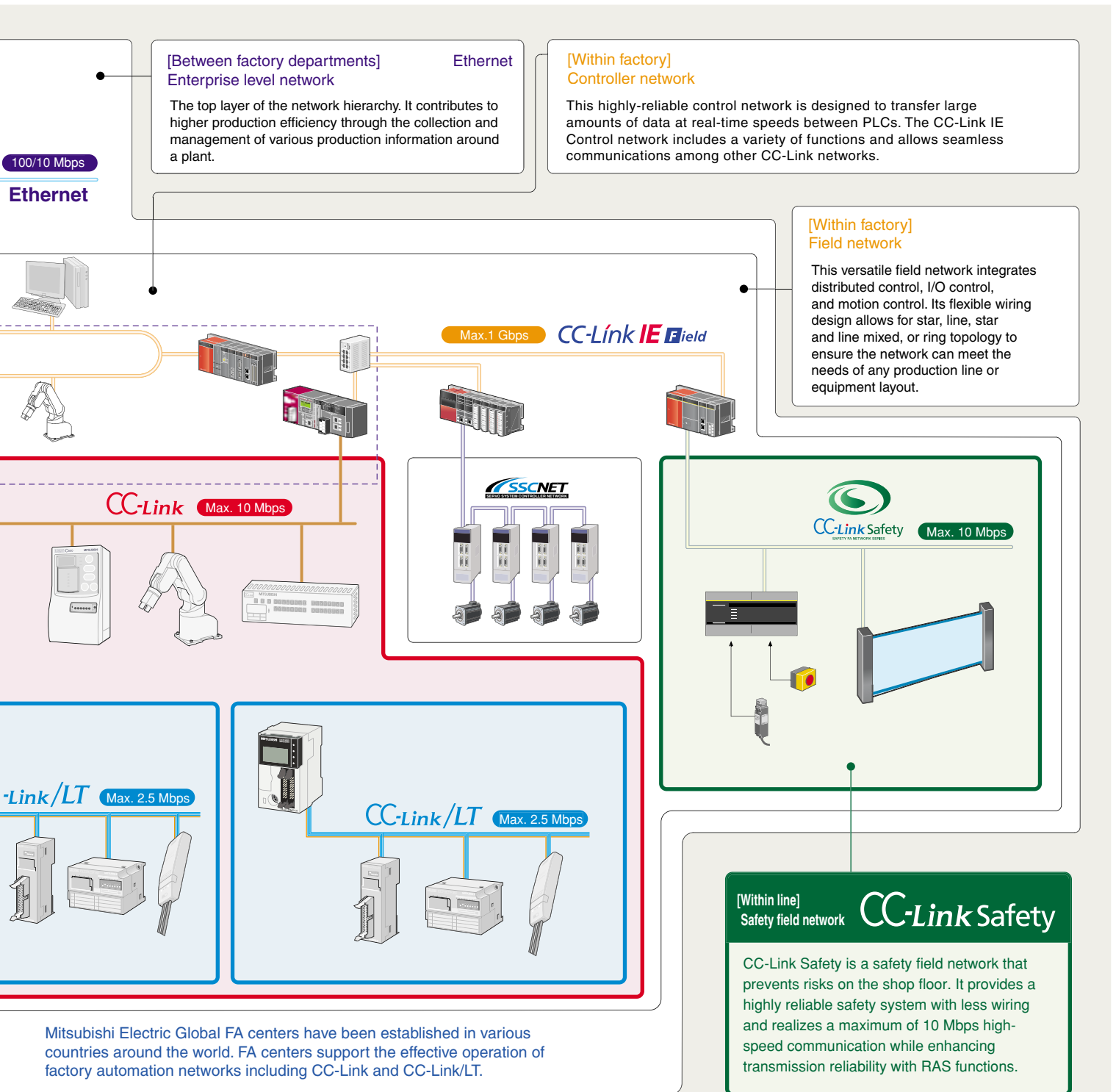
- Easy installation using dedicated connectors
- The point mode setting (4-, 8-, or 16-point mode) enables effective use of I/O points.
- The maximum link points is 1024 points in the 16-point mode.



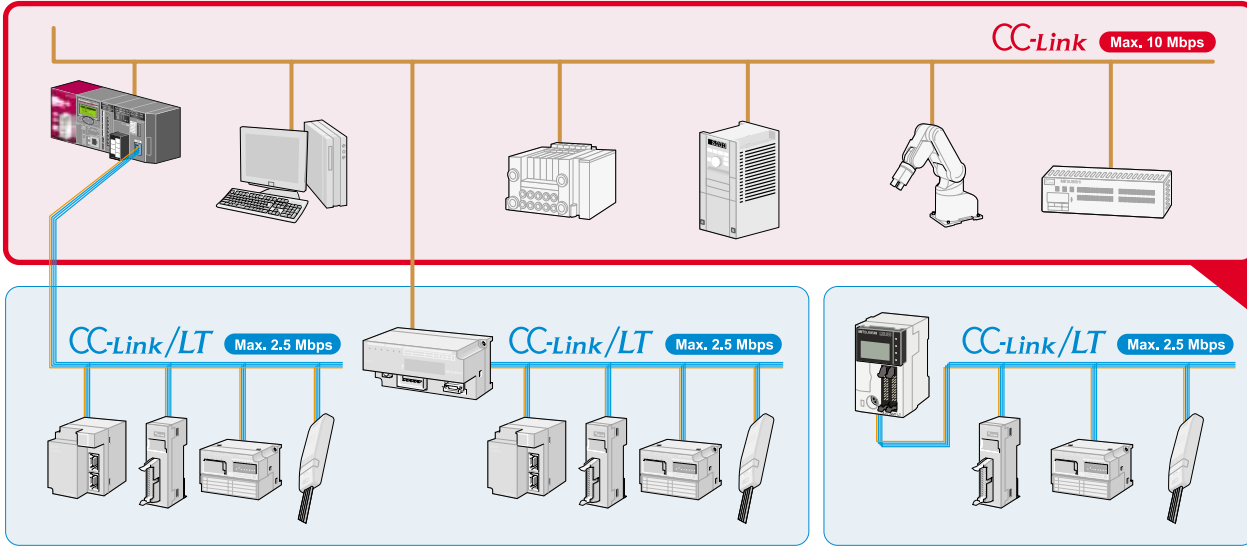
Full-scale support system that helps customers make reliable, satisfied use of networks



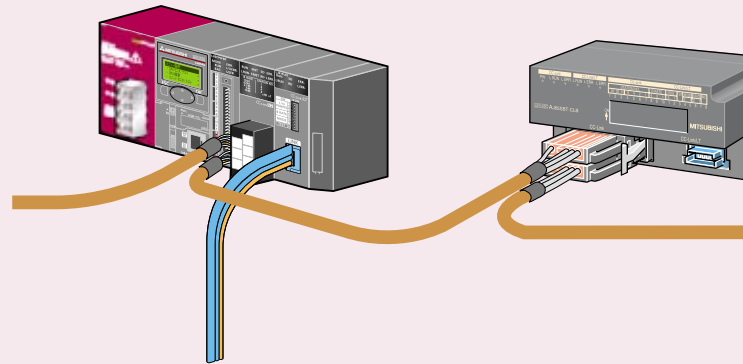
# seamless connectivity



# CC-Link - As the world standard network

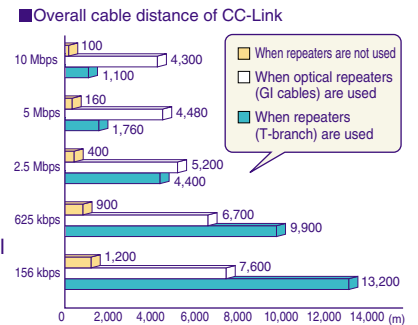


	CC-Link	CC-Link/LT
Control methods	I/O control + intelligent distribution	I/O control
Cable	Dedicated fixed cable, dedicated flexible cable, built-in power cable	Dedicated flat cable, VCTF (Vinyl Cabtire Code), dedicated flexible cable
Maximum number of link points	RX, RY: 8192 points each, RWw: 2048 words, RWw: 2048 words (Ver2.0)	RX, RY: 1024 points each
I/O module lineup	Screw terminal block, spring terminal block, e-CON, push-in connector, waterproof connector, 40-pin connector	Screw terminal block, spring terminal block, e-CON, MIL connector, cable connector
Max. cable distance	1200 m (at 156 kbps) Extendable up to 13.2 km when repeater is used	Trunk: 500 m Branch: 200 m (at 156 kbps)
Parameter setup	GX Works3, GX Works2, GX Developer	Not required
Number of link points per station	<Ver1.0> RX, RY: 32 points each, RWw: 4 words, RWw: 4 words <Ver2.0> RX, RY: 128 points each, RWw: 32 words, RWw: 32 words	Max. 16 points (in 16-point mode)
Network topology	Bus topology T-branch topology Star topology	T-branch topology



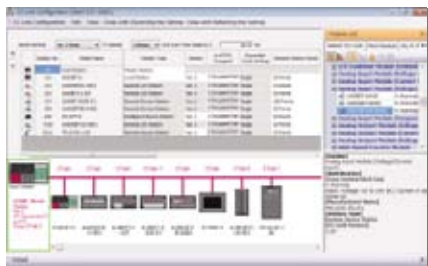
## Large-scale applications from Factory Automation through building management [Max. cable length of 13.2 km]

The total distance covered by the CC-Link network can be increased up to 1.2 km (at 156 kbps). Additionally, the transmission distance can be further extended through the use of T-branch repeater modules. Optical repeaters can also be used so that CC-Link deal with various large-scale facilities.



**For improved setup efficiency**  
**[Simple parameter setup]**

CC-Link settings can be made using the MELSOFT engineering software GX Works3, GX Works2, or GX Developer. The engineering software is also useful in reducing the program size while improving efficiency.



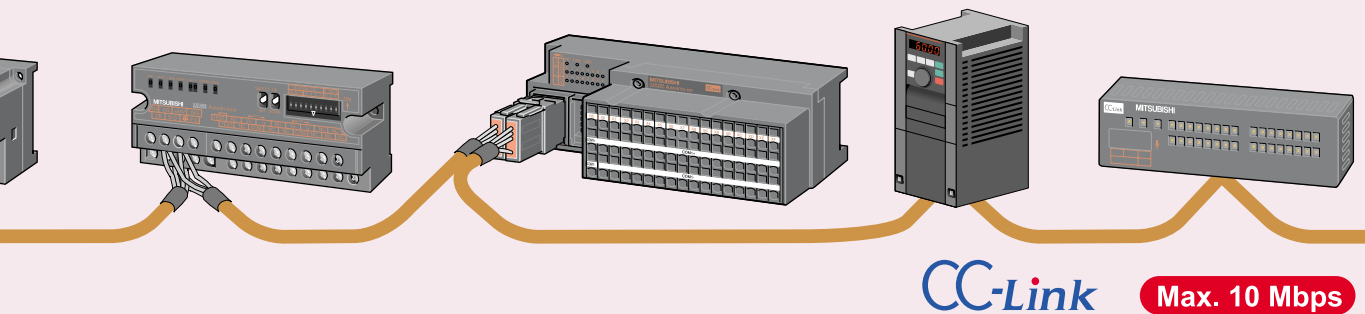
GX Works3

**For achieving complex control, high-mix low-volume production**  
**[High-speed, high-capacity transmission]**

CC-Link is a high-performance network that utilizes high-speed communications (10 Mbps -top level in the industry-), in order to allow transmission of bit data and word data at high-speed and maximum capacity.

**For a simple and cost effective network**  
**[Reduced-wiring network]**

CC-Link realizes simple and cost-effective network, and it is designed to relieve production lines from complicated wiring.



**A diverse range of products from partner manufacturers**  
**[Multi-vendor system]**

More than 1300 types of products are supplied from more than 2000 companies worldwide.

**For non-stop operation [RAS functions]**

CC-Link equips full RAS functionality by functions like Standby Master, Automatic Return, Slave Station Isolation and Diagnostics/Link Status Confirmation.

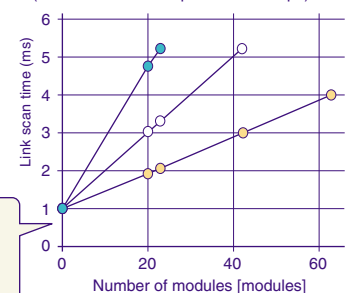
\* RAS: Reliability, Availability, Serviceability



**For improved network reliability**  
**[Consistent network communication time]**

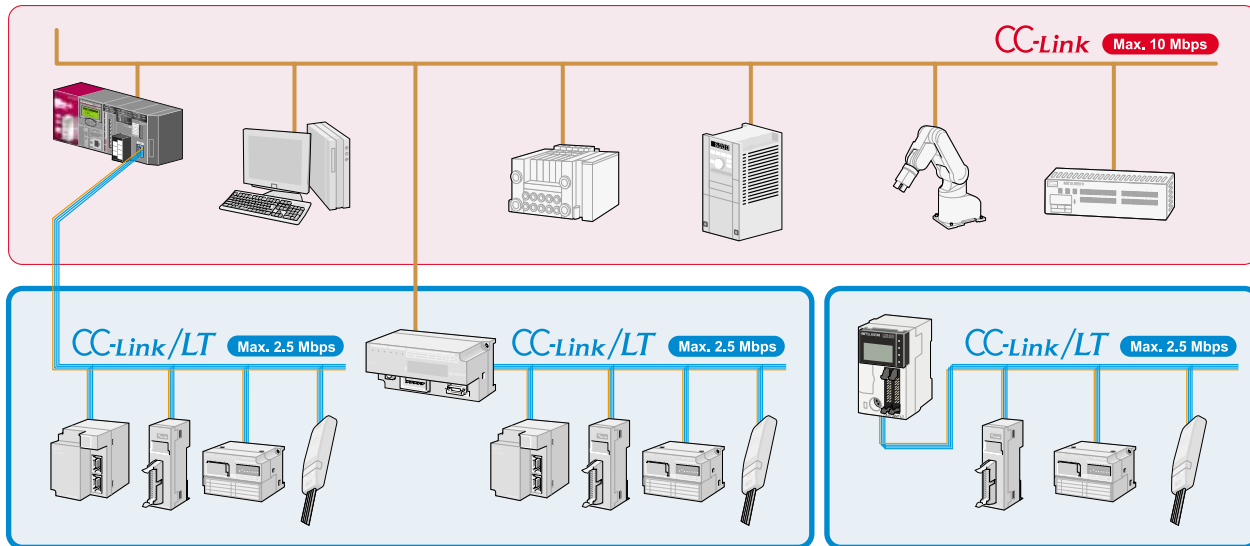
CC-Link guarantees the fixed cyclic transmission time and the cyclic transmission time is not affected by irregular message transmission. It is therefore possible to achieve highly stable control.

■ CC-Link Link Scan Time (at communication speed of 10 Mbps)

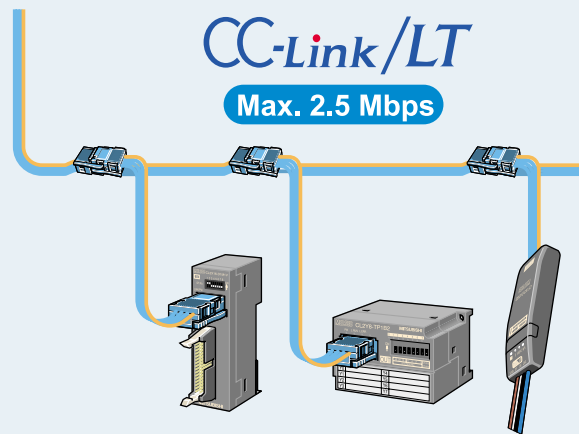


- Remote I/O station only
- Remote device station only (when each station occupies 1 station)
- Local node/intelligent device station only (when each station occupies 1 station)

# CC-Link/LT - with the minimum wiring

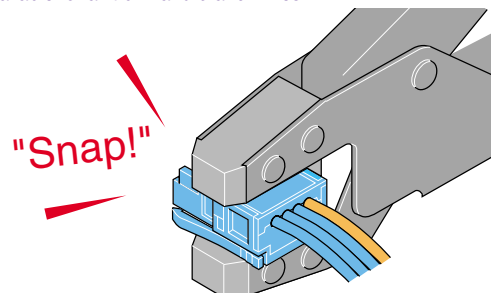


	CC-Link	CC-Link/LT
Control methods	I/O control + intelligent distribution	I/O control
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Maximum number of link points	RX, RY: 8192 points each, RWw: 2048 words, RWw: 2048 words (Ver2.0)	RX, RY: 1024 points each
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Network topology	Bus topology T-branch topology Star topology	T-branch topology



### For rapid startup of systems [easy installation]

- ©Using dedicated connectors and cables can reduce wiring works.
- ©Communication connectors are a male/female integrated type and available for all trunk and branch lines.





### For easy usage

#### [No need of parameter settings]

Troublesome network parameter setting is unnecessary.  
The communication speed setting is required for the master module only.

### For high noise-resistance [Complying with EMC Directives]

CC-Link/LT also inherits the feature of CC-Link, complies with EMC directives for noise-resistance.

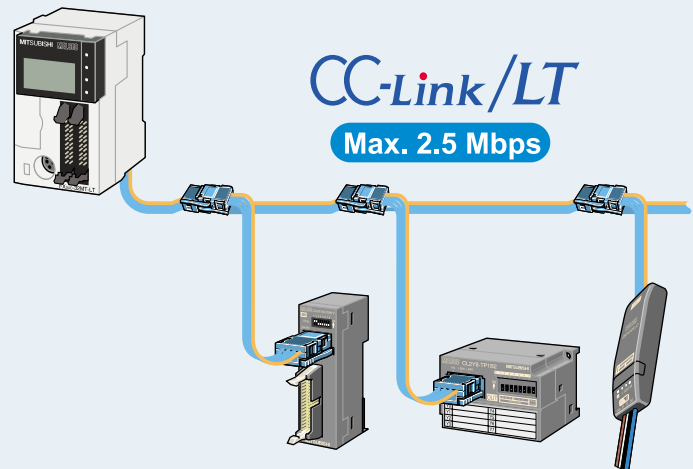
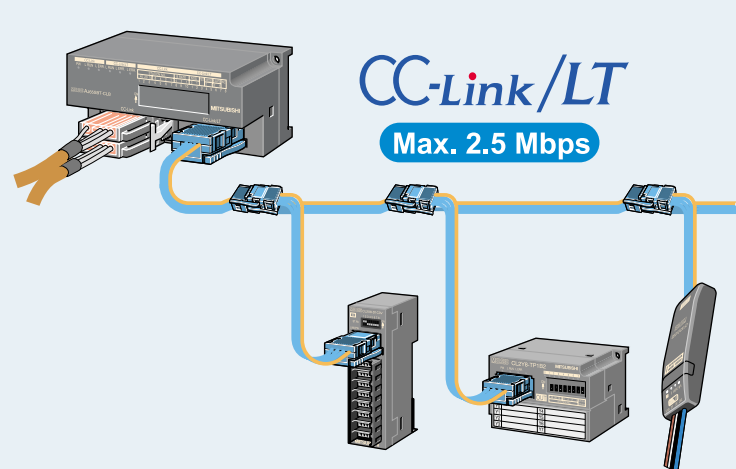
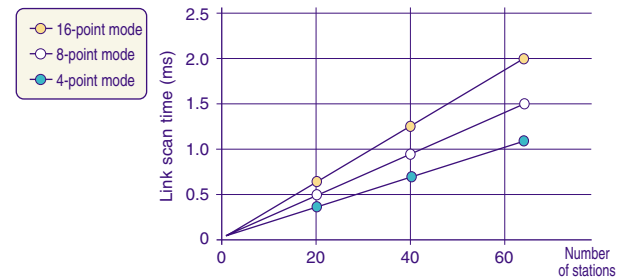
### For efficient use of I/O points [Not wasting I/O points]

The adoption of the point mode (4, 8, 16 points) enables I/O assignment that makes full utilization of the available number of points.

### For high-speed control [Fast response]

When 64 stations are connected, link scan time is a maximum of 1.2 ms (at 2.5 Mbps), achieving excellent fast response performance.

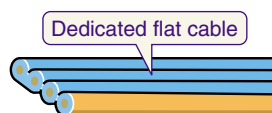
■ CC-Link/LT Link Scan Time (at communication speed of 2.5 Mbps)



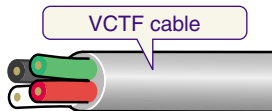
### Cable specific to application requirements

#### [Extensive lineup of cables]

Dedicated flat cable, VCTF cable and Dedicated flexible cable.

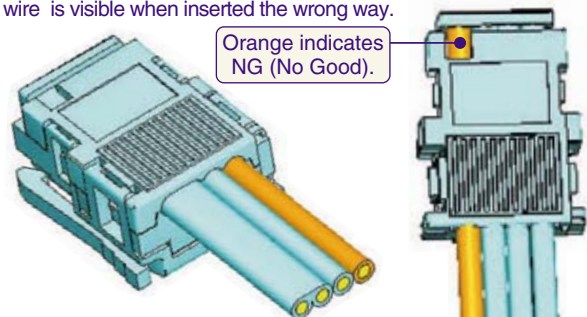


**Flexible!!**



### Improving reliability [Prevention of miswiring]

Dedicated cable shape is designed to prevent miswiring. The orange wire is visible when inserted the wrong way.



# Innovation in shop floor safety, CC-Link Safety

A safety field network "CC-Link Safety" has been developed to reduce risks on the shop floor and to realize a safe work environment. By connecting "safety devices," which detect errors in the production line, and the "safety programmable controller," which stops the production line by signals from the safety devices, with simple wiring, accidents can be prevented during operation. In addition, CC-Link Safety can greatly reduce wiring for the safety system.

## Hazards of production lines



Enclosing hazards in a safety guard is not good enough. Also, worker mistakes and machine failures are unpredictable. That is why configuring a system with a "safety solution" which always prevents accidents is necessary.



## Safety solution example



### World wide safety [International safety standards compliant]

Conforms to the international safety standards IEC 61508 SIL3 and EN954-1/ISO 13849-1 Category 4 to meet safety needs at global production sites.

### Safety assurance and wiring reduction [Inherited CC-Link functions]

Transmission speed of 10 Mbps equivalent to CC-Link is realized, allowing use of the same CC-Link cables and connection of standard CC-Link stations.

### Reliable safety control [Enhanced RAS functions]

Detects communication errors such as communication delays and loss of messages and then stops the system completely.

### Centralized error/failure information management [Error/failure logs]

With the RAS functions, the safety master station logs error information of safety remote stations, enabling effective troubleshooting. The system is completely stopped upon communication error detection.

### Provision for troubles [Identifying the communication target station]

By setting the model name or product information of safety remote stations with the network parameters, the system can detect mismatch communication targets.

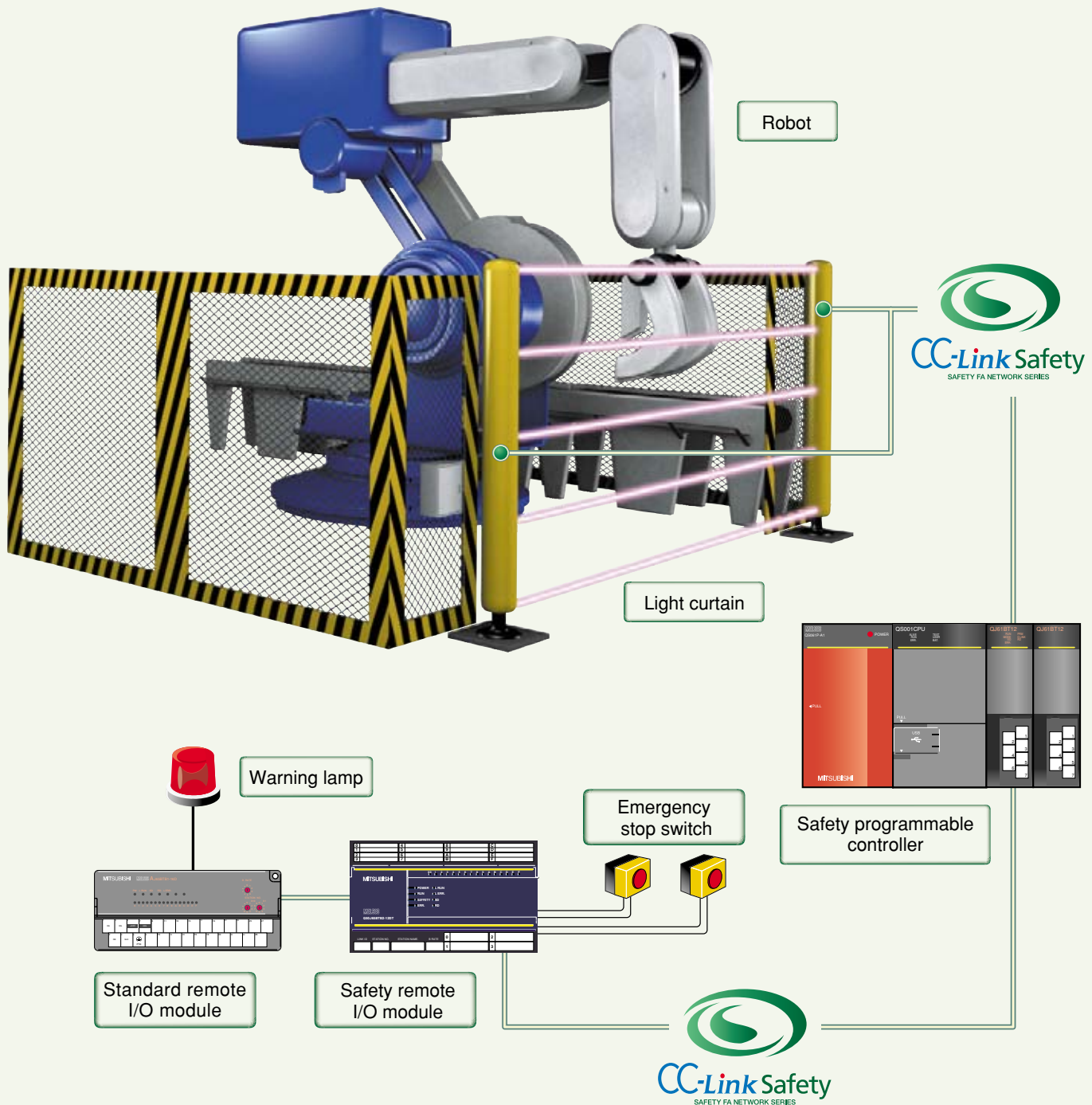
### Flexible system configuration and wiring [Distributed safety remote stations]

Safety remote I/O stations can be spread out, minimizing wiring for I/O. Expanding I/O is also easy.

### A large choice of safety system configuration [Various compatible products]

Mitsubishi Electric and many other CLPA partners provide a variety of compatible products including a programmable controller, light curtains, and warning lamps. Moreover, the same CC-Link cables and standard CC-Link stations can be used.

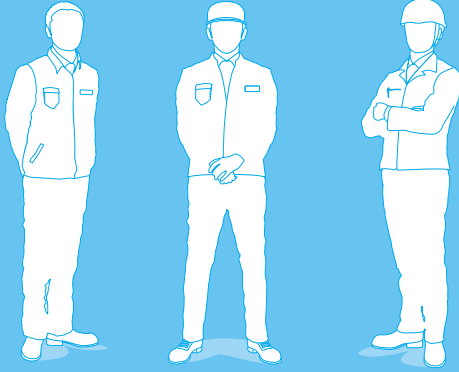
**■ CC-Link Safety system configuration example**  
 (Automotive welding line)



For those in design, production and maintenance

# CC-Link & CC-Link/LT provide

CC-Link & CC-Link/LT provide solutions for each subject in the field.



Each person in charge of engineering, production and maintenance has his/her own subjects.

CC-Link and CC-Link/LT respond to each subject with a solution.

CC-Link is an established open field network originated from Japan.

Fully inheriting the CC-Link concept, CC-Link/LT is specifically designed as a sensor level network.

CC-Link and CC-Link/LT provide a function for each subject on the network.

## More functions

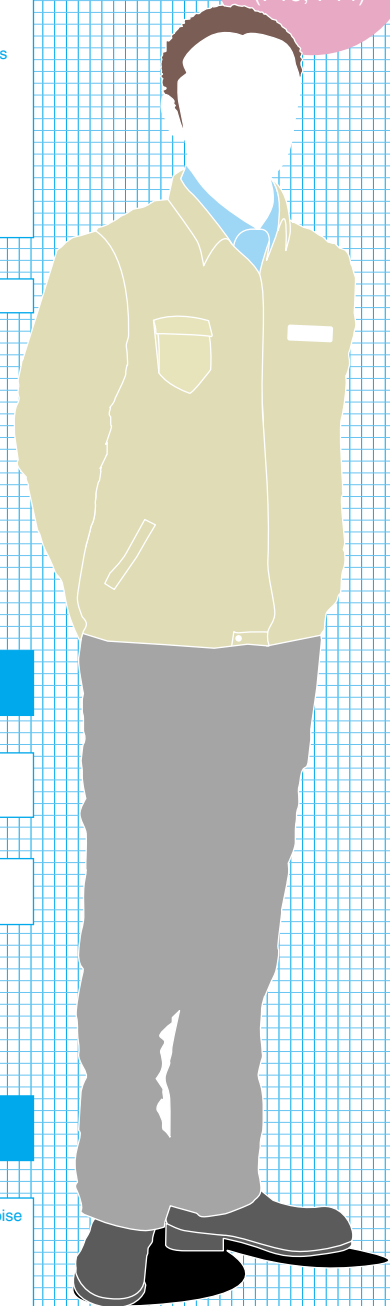
### Subjects for CC-Link

- Flexible production system
- Complex system controls
- Connect with lots of analog devices
- Distributed control system
- Connect between manufacturing processes
- Network configuration for building management
- Connect with HMI and ANDONs
- Use inverters and servos

### Subject for CC-Link/LT

- Use high-speed sensors

Engineering section (P13, P14)



## More simple

### Subjects for CC-Link

- Use various devices
- Easy network configuration

### Subjects for CC-Link/LT

- Use remote I/O modules
- Apply widely used cables

## More secure

### Subjects for CC-Link

- Network configuration with high-noise resistance
- Use various devices in a single network
- Export factory facilities and machineries overseas



# solutions

## Device layout

Subjects for CC-Link & CC-Link/LT

- Arrange devices as we need
- Simple attachment and removal

## Test / Operation

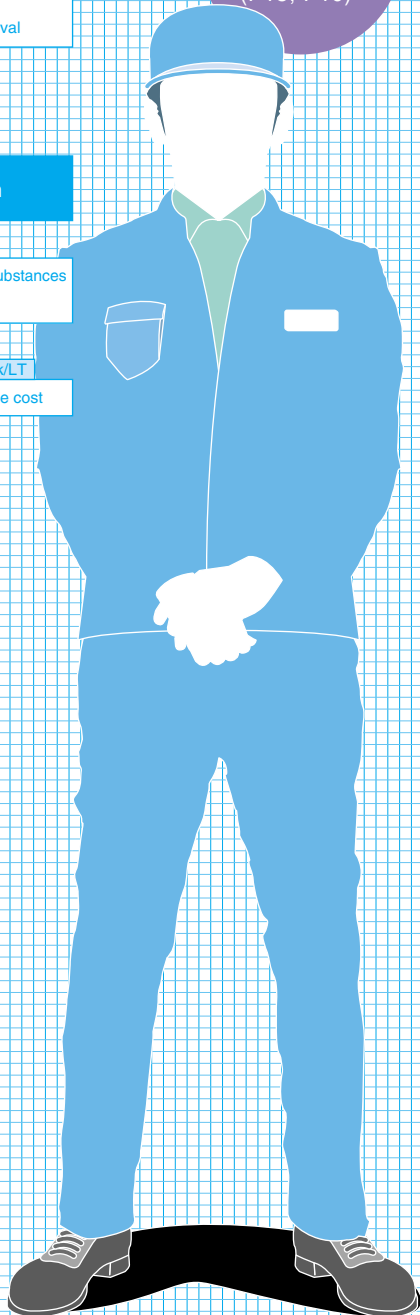
Subjects for CC-Link

- Prevent troubles by foreign substances
- Quick check-up for wiring

Subject for CC-Link & CC-Link/LT

- Save wiring man-hour and the cost

Production  
section  
(P15, P16)



## Preventive maintenance

Subject for CC-Link & CC-Link/LT

- Prevent troubles by network communication test

Subject for CC-Link

- Maintain PLCs by remote control

Subject for CC-Link & CC-Link/LT

- Network configuration with high noise resistance

## Troubleshooting

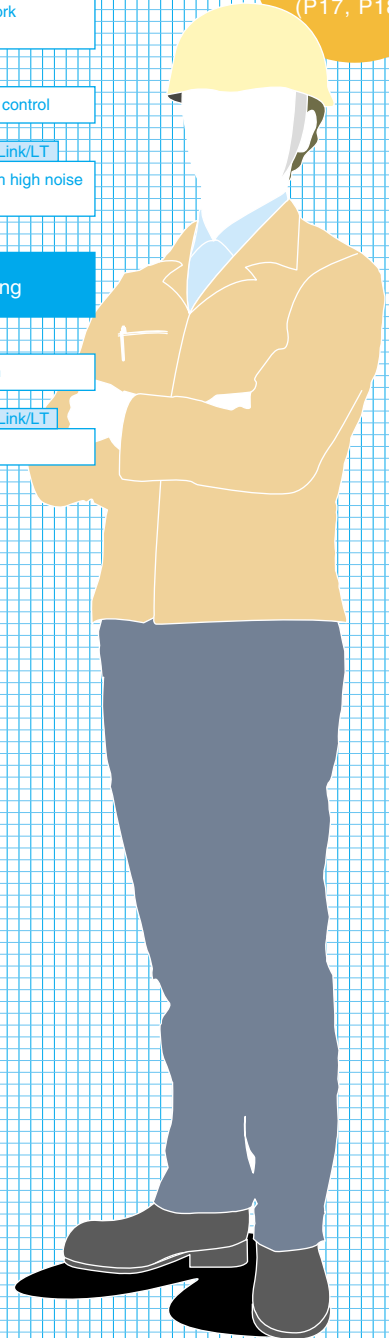
Subject for CC-Link

- Prevent system shutdown

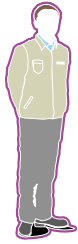
Subject for CC-Link & CC-Link/LT

- Easy troubleshooting

Maintenance  
section  
(P17, P18)



The solutions



# CC-Link & CC-Link/LT support the facility improvement

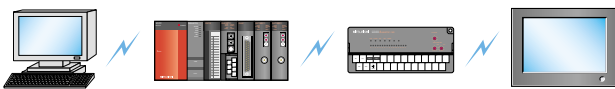
## CC-Link ensures

### Flexible production system

▶ **CC-Link is a high-speed and high-capacity network.**

CC-Link is a high speed field network that can handle both control and information together.

#### ■ High-speed/High-capacity data transmission



<High-capacity Cyclic Transmission Data>

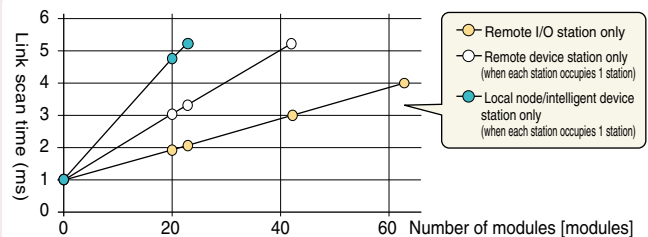
**Data capacity** Remote I/O (RX, RY)=8192 points each  
Remote register (RWw)=2048 words  
(RWr)=2048 words (when Ver2.0 is used)

### Complex system controls

▶ **CC-Link guarantees consistent communication time.**

The cyclic transmission time is not affected by irregular message transmission to the HMI products. It is possible to achieve highly stable control.

#### ■ CC-Link link scan time (at communication speed of 10 Mbps)



### Connect with lots of analog devices

▶ **CC-Link V2 supports an extra broader range of needs.**

CC-Link Ver.2 can control maximum eight times the data capacity compared with earlier CC-Link compatible products. CC-Link Ver.2 compatible analog modules are applicable to process control.

#### ■ CC-Link Ver2.0-compatible analog module

**CC-Link Ver 1.0**

Up to 21 modules can be connected.

CC-Link V2 has doubled the module connection capacity

**CC-Link V2**

Up to 42 modules\* can be connected.

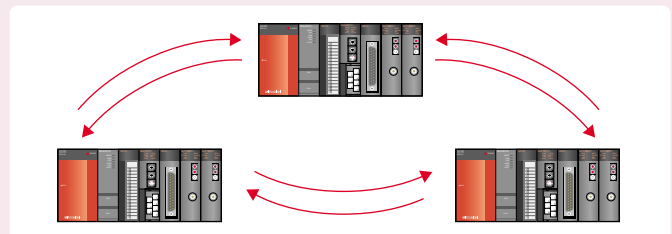


### Distributed control system

▶ **CC-Link realizes simple distributed control.**

CC-Link provides highly stable cyclic transmission, which enables N:N communication between controller masters or local stations. This N:N communication method between controllers realizes a distributed control system for each system.

#### ■ Simple controller communication



\* Max. 64 modules when using the MELSEC iQ-R Series (RJ61BT11)'s remote device net Ver.1 mode or the remote device net Ver.2 mode.

## CC-Link/LT ensures

### High-speed sensor inputs

▶ **CC-Link/LT provides fast response.**

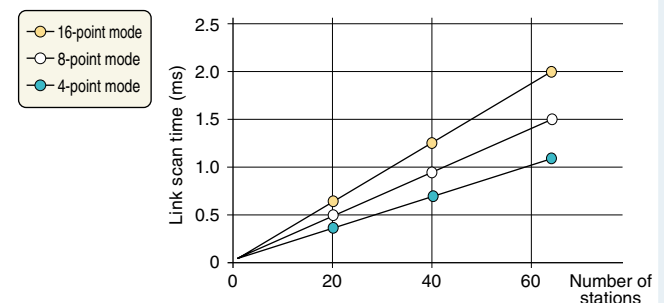
When 64 stations are connected, the link scan time is a maximum of 1.2 ms (at 2.5 Mbps). Select 2.5 Mbps, 625 kbps or 156 kbps depending on the transmission distance.

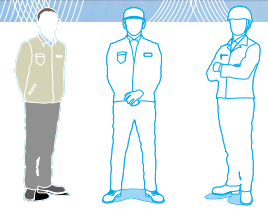
### Use remote I/O modules

▶ **CC-Link/LT is not required to make parameter setting.**

Troublesome network parameter setting is unnecessary. The communication speed setting is required for the master module only. There is no need to set the communication speed on the remote station.

#### ■ CC-Link/LT Link Scan Time (at communication speed of 2.5 Mbps)





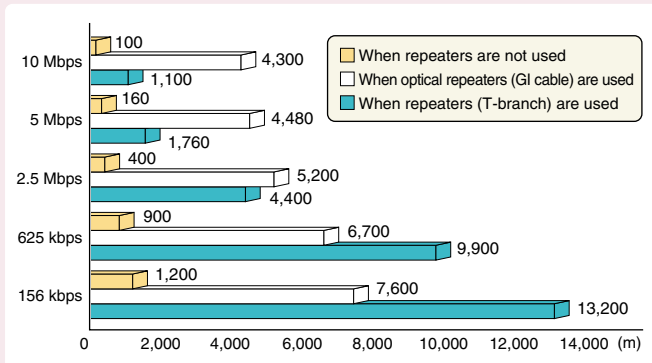
- Connect between manufacturing processes
- Network configuration for building management

▶ The total extended distance of the CC-Link cable is 1,200 m, and can be extended up to 13.2 km when repeaters are used.

CC-Link total extended distance can be as long as 1.2 km\*. The transmission distance can be extended up to 13.2 km\* when T-branch repeaters are used.

\* Maximum transmission distance when transmission speed is set to 156 kbps.

■ Overall cable distance of CC-Link



Use various devices

▶ CC-Link V2 can control up to 8192 points and 4096 words.

CC-Link Ver2.0 can transmit and receive data approx. 8 times larger than the earlier Ver.1.10/Ver.1.00.

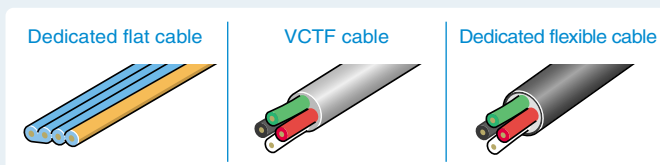
■ Comparison of communication data

<b>CC-Link Ver 1.0</b>	Remote I/O ..... (RX, RY) = 2048 points each Remote register ..... (RWw) = 256 words (RWr) = 256 words
<b>CC-Link V2</b>	Remote I/O ..... (RX, RY) = 8192 points each Remote register ..... (RWw) = 2048 words (RWr) = 2048 words

Apply widely used cables

▶ CC-Link/LT specifies cables to application requirements.

Dedicated flat cable, VCTF cable and dedicated flexible cable are available.



Connect with HMIs and ANDONs

▶ CC-Link can connect HMIs and ANDONs by transient transmission.

CC-Link simplifies data transfer to HMIs and ANDON with transient transmission (up to 960 bytes) and cyclic transmission.

Easy network configuration

▶ CC-Link parameters are easily set with the engineering software.

The total programming tool "GX Works3", "GX Works2", and "GX Developer" with improved operability makes full use of the advantages of Windows® and enables you to set CC-Link parameters without a program.

Reliable network

▶ CC-Link achieves high reliability with dedicated cables.

CC-Link uses dedicated cables that support high-speed transmission up to 10 Mbps. These cables are also highly noise-resistant.

■ CC-Link dedicated cable



CC-Link also supports

Using various devices in a single network

▶ Diverse range of products supplied from many partner manufacturers.

Exporting factory facilities and machineries overseas

▶ CC-Link complies with various safety standards including UL standards.

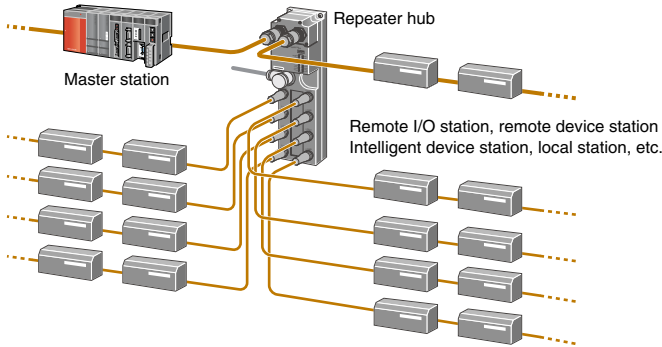


# CC-Link & CC-Link/LT provide various useful functions

## Device layout as we need

### ▶ CC-Link allows flexible installation.

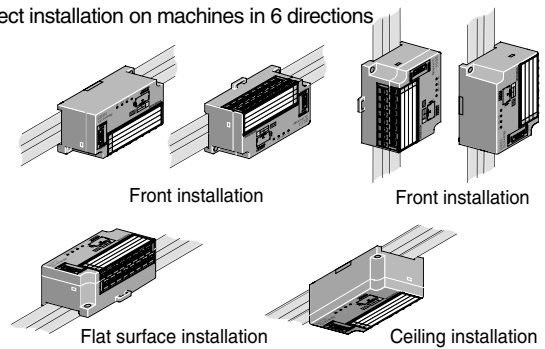
T-branch repeaters, wireless optical repeaters, optical repeaters, and repeater hubs are available with CC-Link. They enhance the freedom of application even at 10 Mbps.



### ▶ CC-Link family remote I/O modules occupy a small footprint.

Compact type remote I/O modules with 32, 16, 8, 4, and 2 I/O points are available. They can be installed in six different directions, including ceiling installation, front installation, and flat surface installation, and selected according to the installation environment and the application.

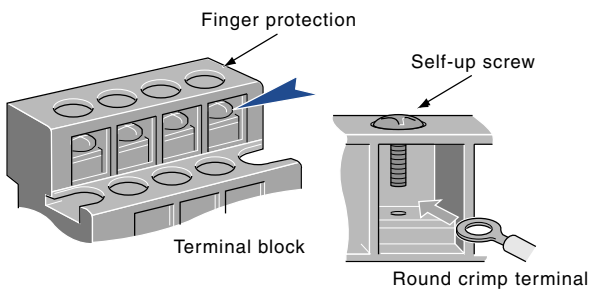
#### ■ Direct installation on machines in 6 directions



## Save wiring man-hour and the cost

Dedicated connectors of CC-Link family are designed to reduce wiring works, cost and wiring mistakes.

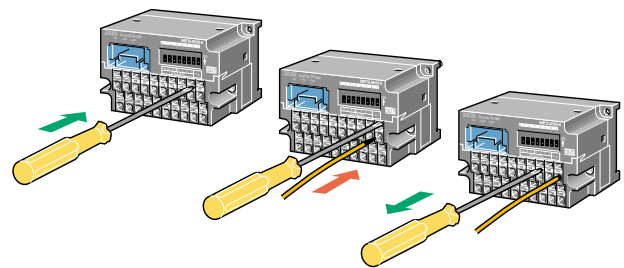
### Screw terminal block type



The round crimp terminal can be directly connected with the self-up screw by simply unfastening the terminal block screw.

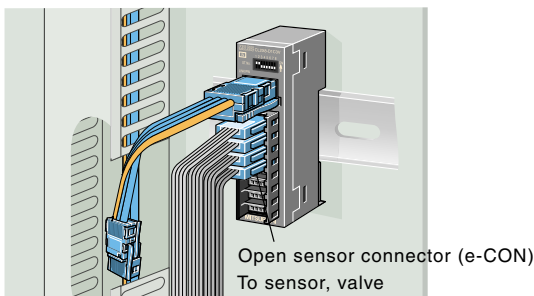
\* The specifications depend upon a product.

### Spring clamp terminal block type



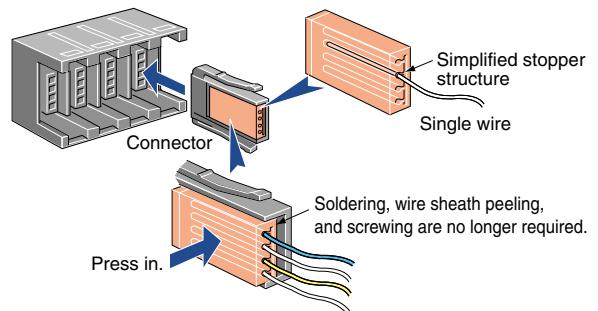
Spring clamps allow quick and easy connectivity.

### Sensor connector (e-CON) type



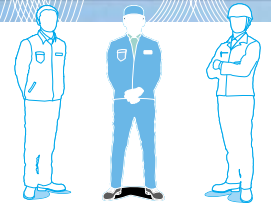
Utilizing the industry-standard e-CON, sensors can be replaced individually.

### Push-in connector type



This connector adopts a lock mechanism that is easy to lock and unlock. You can connect single wires by simply pushing in the connector.



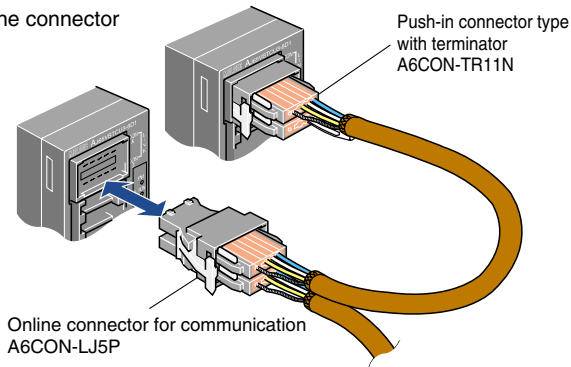


### Simple attachment and removal

#### ▶ CC-Link family products allow easy connection.

By using online connectors for communication and power supply, it is possible to replace modules without stopping the communication.

#### ■ Online connector



### Prevent troubles from foreign substances

#### ▶ CC-Link protective cover protects I/O terminals.

The protective cover can be easily attached and removed. The transparent material allows you to check the LEDs and wiring conditions.

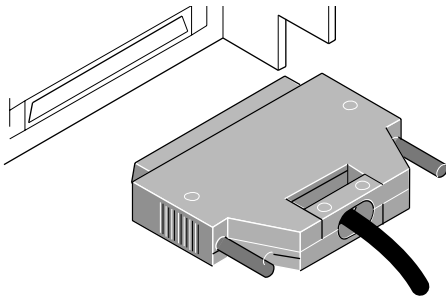
### Quick checkup and startup

#### ▶ CC-Link ensures easy setup and startup.

CC-Link's auto-startup function allows you to start up the network without the need to set network parameters.

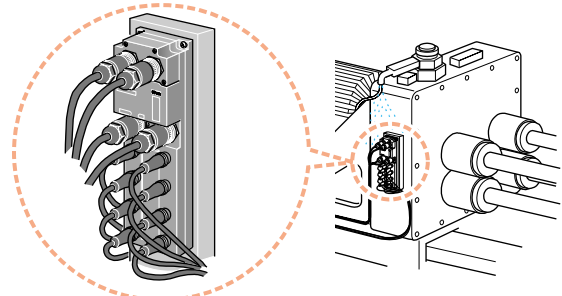
### ▶ Specific connection to application requirements

#### 40-pin connector type



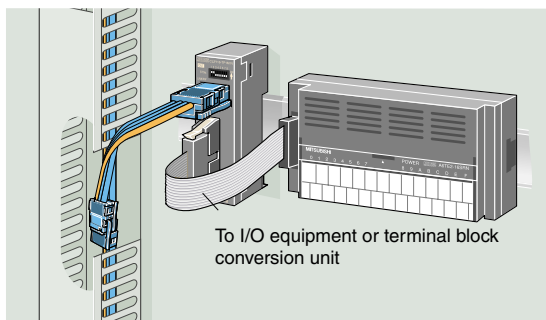
This type provides an easy and economical way of wiring.

#### Waterproof connector type (M12)



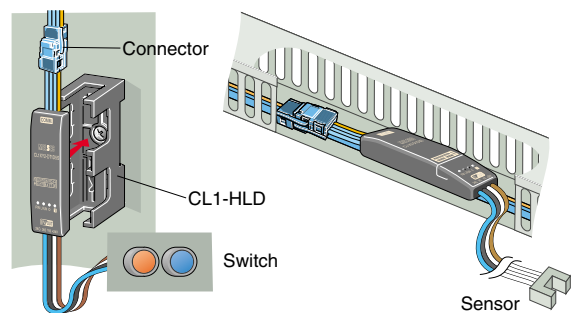
The waterproof type remote I/O module is housed in a protective structure conforming IP67. Therefore it can be used without worry in an environment where water is present.

#### MIL connector type



This is the industry's smallest connector in its class, and can be easily connected to a relay terminal or terminal block conversion module.

#### Cable type



This is the industry's smallest connector in its class. Suited to fit compactly into main trunking ducts.



# CC-Link & CC-Link/LT support the maintenance work

## Preventive maintenance

### Prevent troubles by network communication test

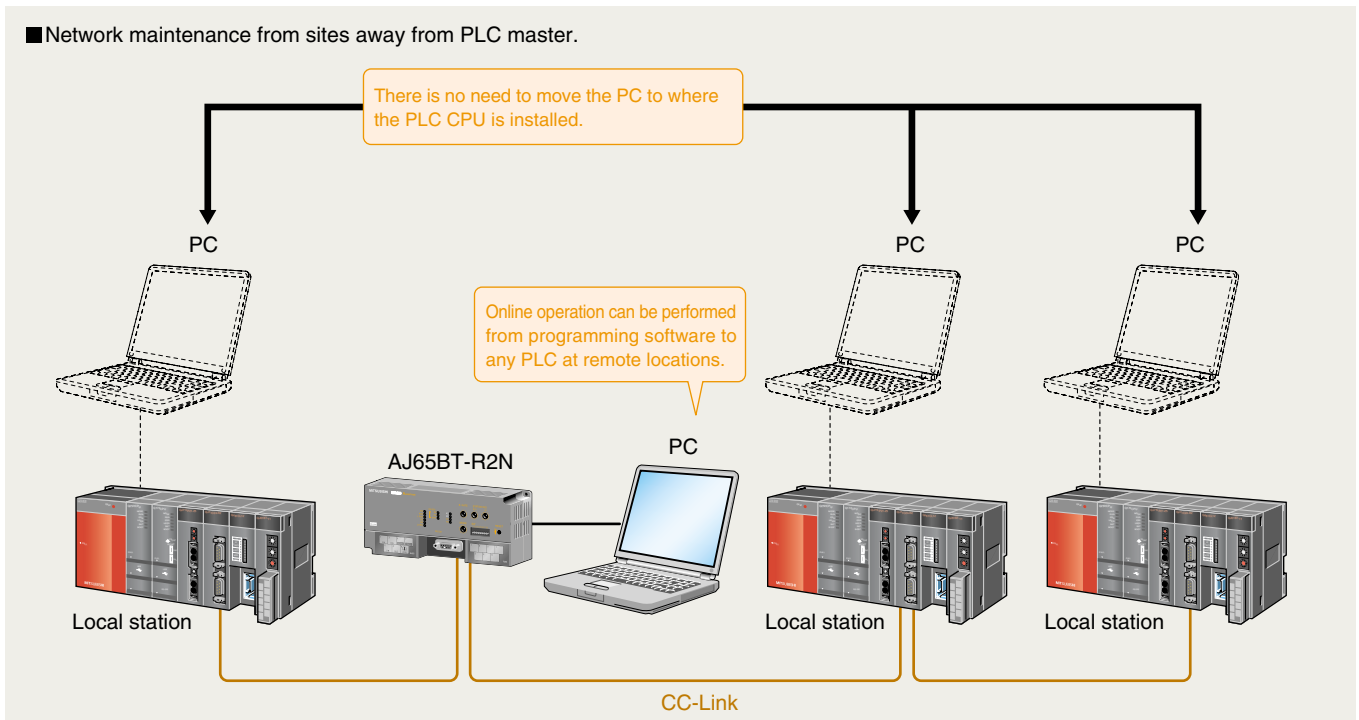
▶ **CC-Link family products provides one-step-ahead preventive maintenance.**

It is possible to check the data link status using special relays and registers. Hardware and line connection can be tested via offline tests.

### Maintain PLCs by remote control

▶ **CC-Link provides remote operation functions.**

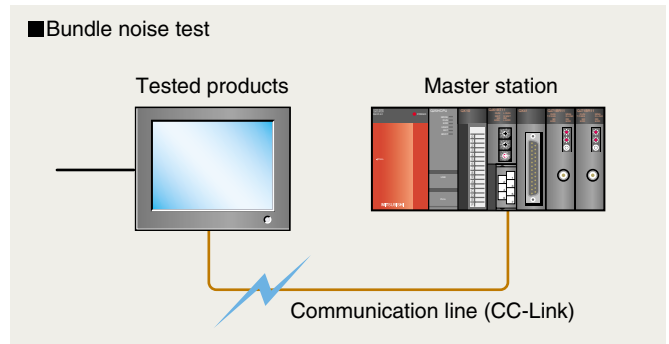
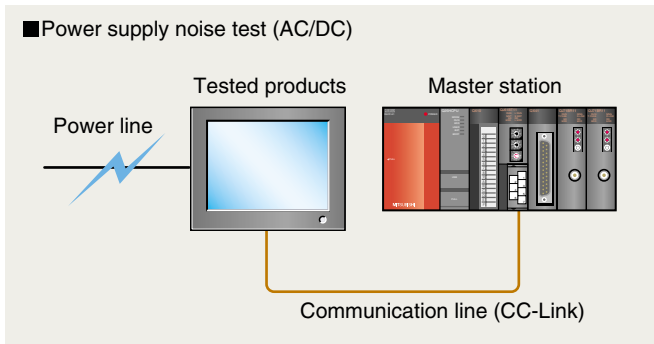
By using the RS-232 interface module (AJ65BT-R2N) into the CC-Link system, it is possible to do network maintenance from sites away from PLC master station.

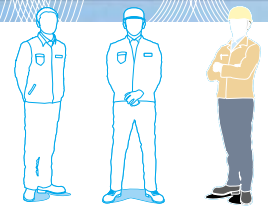


### Network configuration with high noise resistance

▶ **CC-Link family compatible products are highly noise resistant guaranteed by conformance testing.**

A conformance test is conducted for all products sold by CLPA partners. The test includes a power supply noise test and a bundle noise test.





## Troubleshooting

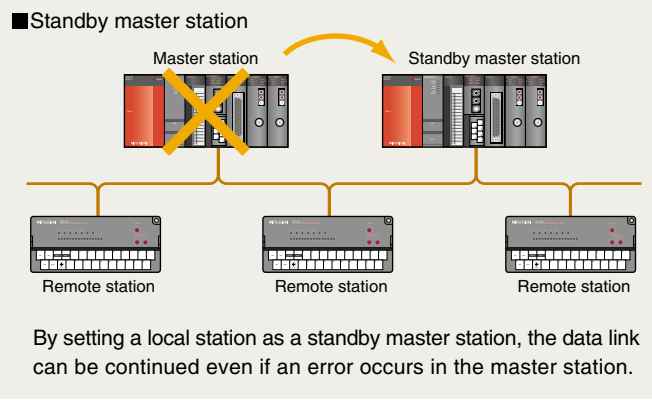
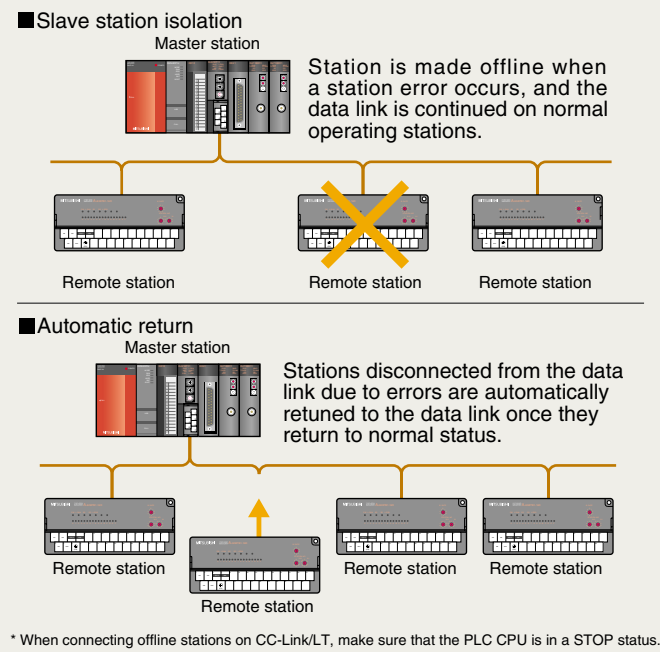
### Prevent system shutdown

▶ **CC-Link provides enhanced RAS functions.**

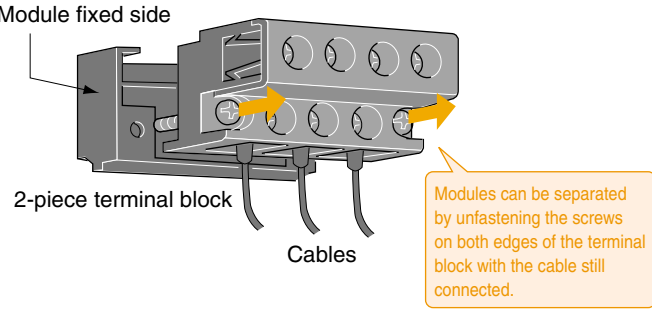
CC-Link realizes minimal system shutdowns by "error invalid station setting," "slave station isolation," "automatic return," "standby master station," and "2-piece terminal block".

<Error invalid station setting>

In the online mode, this setting temporarily prevents modules specified on GX Developer from being treated as data link faulty stations.



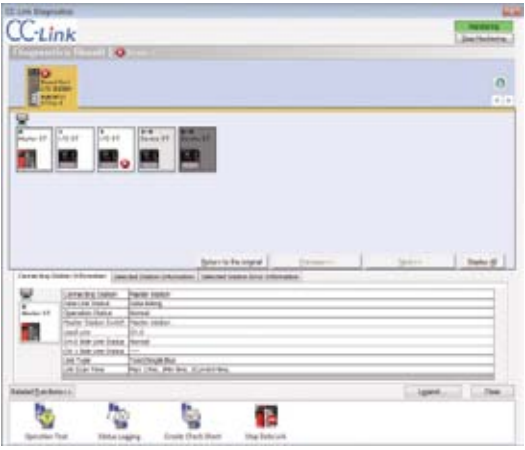
■ The "2-piece terminal block" allows modules to be replaced without stopping the CC-Link system.



### Easy troubleshooting

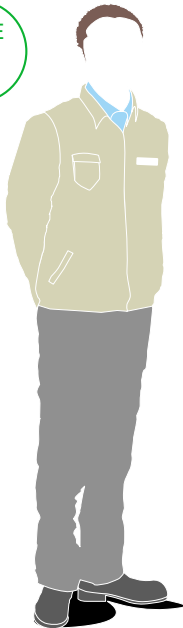
▶ **Diagnose CC-Link family networks with GX Works3, GX Works2, or GX Developer.**

The status of the CC-Link and CC-Link/LT networks can be monitored using GX Works3, GX Works2, or GX Developer.



# Case Study "CC-Link is superior to existing networks" Realize the advantages of CC-Link.

CASE 1



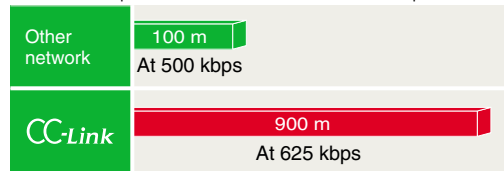
Mr. A from the engineering section

"The current network distance of our factory is limited to 100 m, and the transmission speed is unstable."

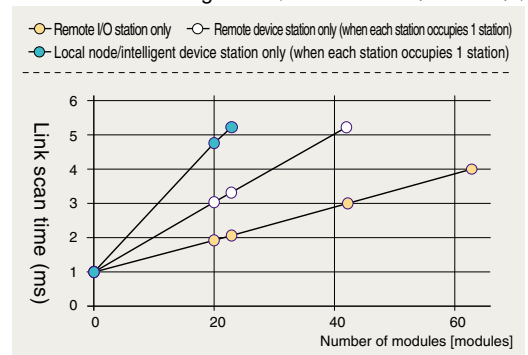
Mr. A's is planning to expand his factory. His first challenge is total cable distance and communication stability. What interested him is that the network distance covered by the CC-Link network can be increased up to 900 m at 625 kbps, and transmission time is stable as well.

- Feature 1** CC-Link is high-speed network with a long total cable distance.
- Feature 2** CC-Link is a consistent network.

Transmission speeds and overall network distance of other companies' networks



CC-Link scan time guide (at communication speed 10 Mbps)



"Our factory's networks are complex because they use various protocols. How about CC-Link?"

CC-Link eliminates the need to use different protocols.

- Feature 3** CC-Link has a single protocol.

"It takes too long to reconnect network stations."

Regarding this issue, Mr. A learned that CC-Link compatible products quickly return to the network, and began to feel more attraction to CC-Link.

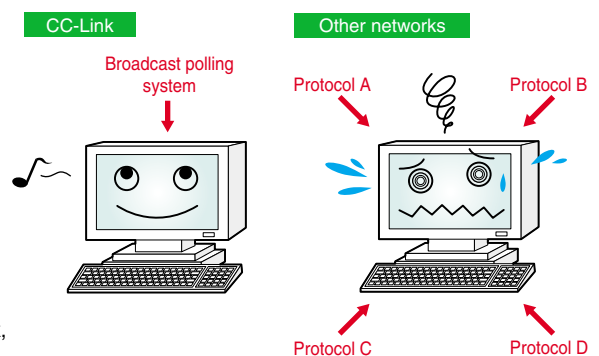
- Feature 4** CC-Link offers quick return to the network system.

"We also need distributed controls."

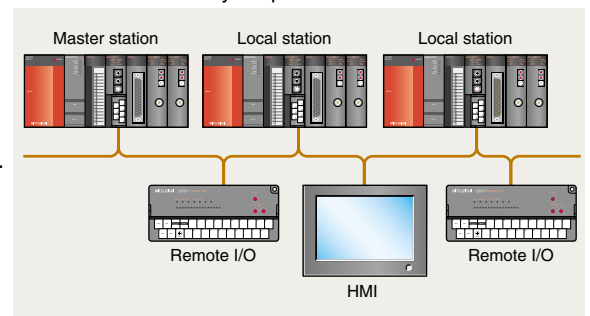
Also, using CC-Link, he easily realized "distributed control by establishing communication between controllers".

- Feature 5** CC-Link is simple control level network.

Protocol comparison



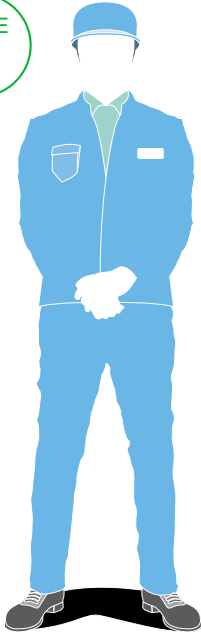
Distributed control by simple inter-controller network



"That's why we



CASE  
2



Mr. B from the production section

"Trunk cables and branch cables in the current network are different. Furthermore, trunk cables are expensive."

Mr. B is in charge of production engineering. He has been worried about utilization and high cost of the existing network. Therefore, he collected CC-Link information and compared it with other networks.

**Feature 1** CC-Link is flexible to install.

**Feature 2** CC-Link is reasonably priced.

■ Cable comparison

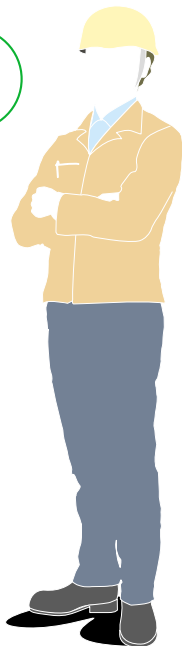
Item	CC-Link	Other network	
		Thick cable: 12 mm	Thin cable: 7 mm
Cable diameter	7 mm	Thick cable: 12 mm	Thin cable: 7 mm
Trunk/ Branch	Trunk and branch	Trunk	Branch
Total cable length (no repeater)	Max. 1200 m (156 kbps)	Max. 500 m (125 kbps)	Max. 100 m (125 kbps) (250 kbps) (500 kbps)

"It is stressful to design the necessary power supply capacity of a network."

He used to be bothered by complicated calculations for the required power capacity. He soon learned that such bothersome calculation was not necessary.

**Feature 3** The calculation of the power supply capacity is not required for CC-Link.

CASE  
3

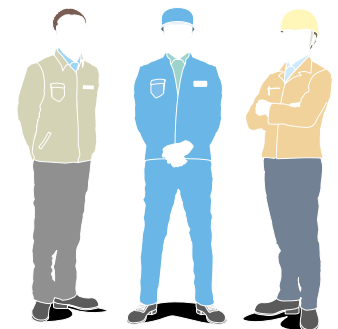
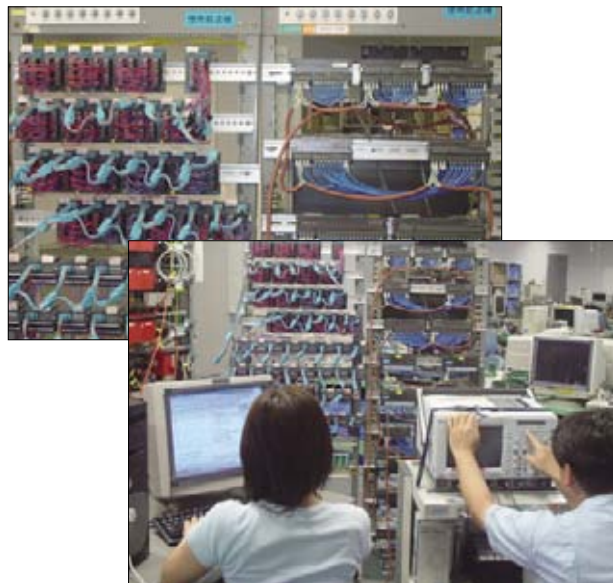


Mr. C from the maintenance section

"Conformance testing is not mandatory for the current factory network."

Reliability is the most important for him. What interested him is that CC-Link products are guaranteed by the conformance test of the high noise resistance.

**Feature 1** CC-Link is reliable because the conformance test is mandatory.



chose CC-Link!"

# Networks is a key factor in various business applications.

## Material handling application

Improved workability by repeaters

CC-Link

Connection of various devices (Inverter, HMI)

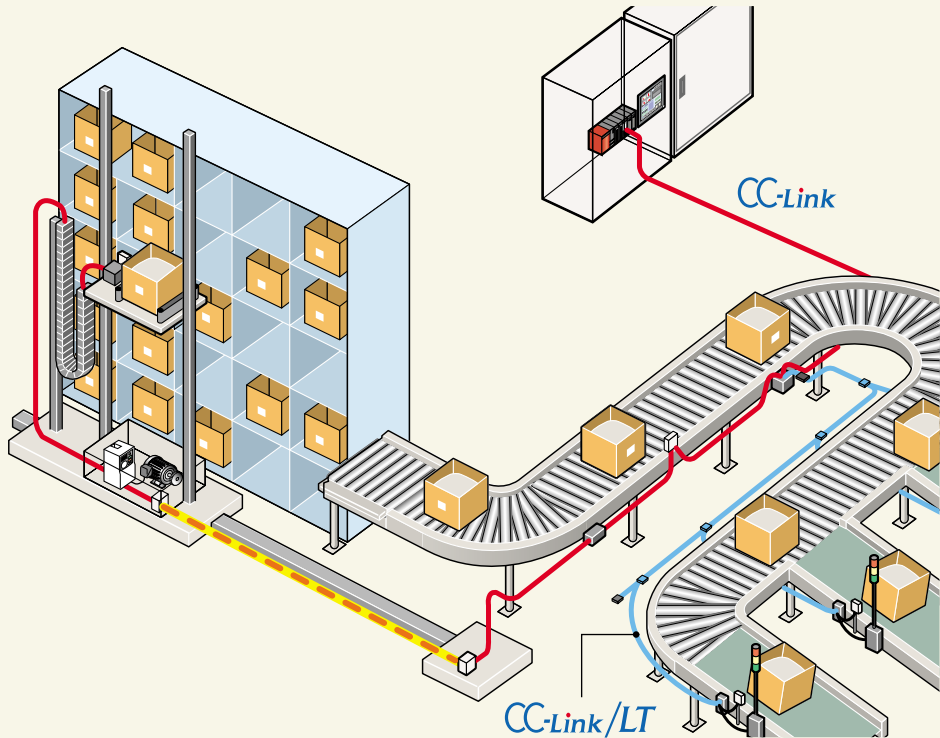
CC-Link

Cable specific to the application requirement.

CC-Link CC-Link/LT

Seamless communication using bridges

CC-Link/LT



## Building management application

The total cable distance up to 13.2 km by using repeaters

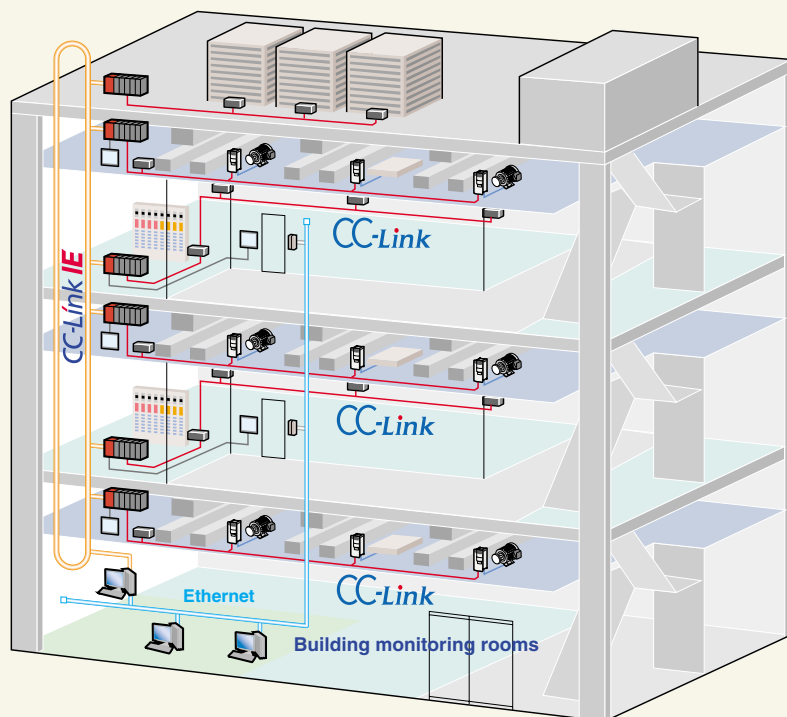
CC-Link

Distributed control

CC-Link

Seamless communication between Ethernet, CC-Link IE Control Network and CC-Link

CC-Link



# The CC-Link family is the best solution.

## Semiconductor production application

High-speed transmission

CC-Link/LT

High noise resistance

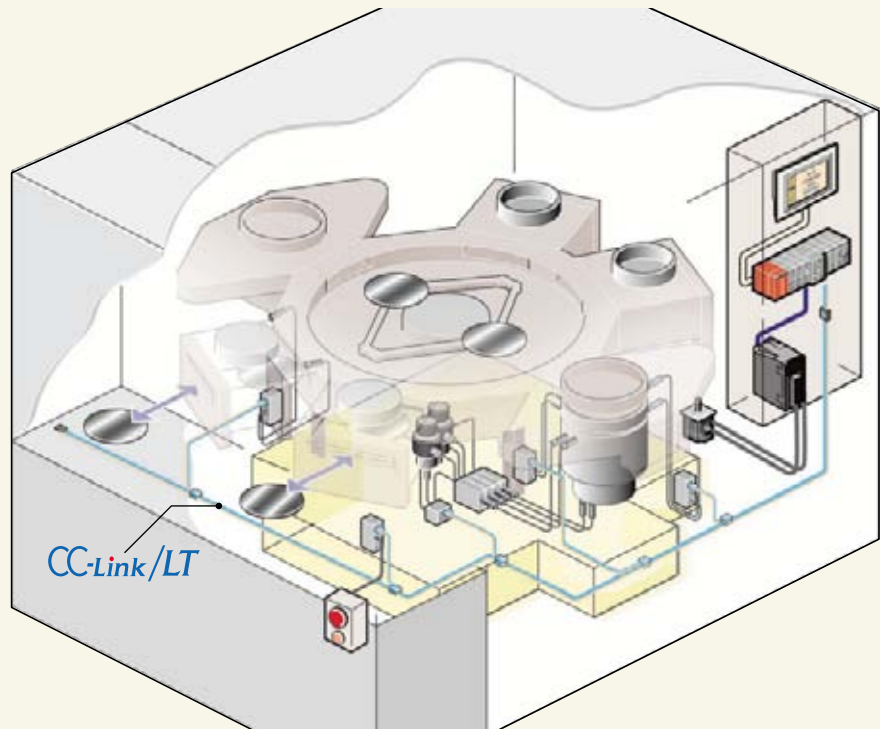
CC-Link

Wire saving  
Small footprint

CC-Link/LT

Compliant with EES.

CC-Link



## Parking lot application

<FX3uc and CC-Link/LT combination>

High speed transmission

CC-Link/LT

Wire saving  
Small footprint

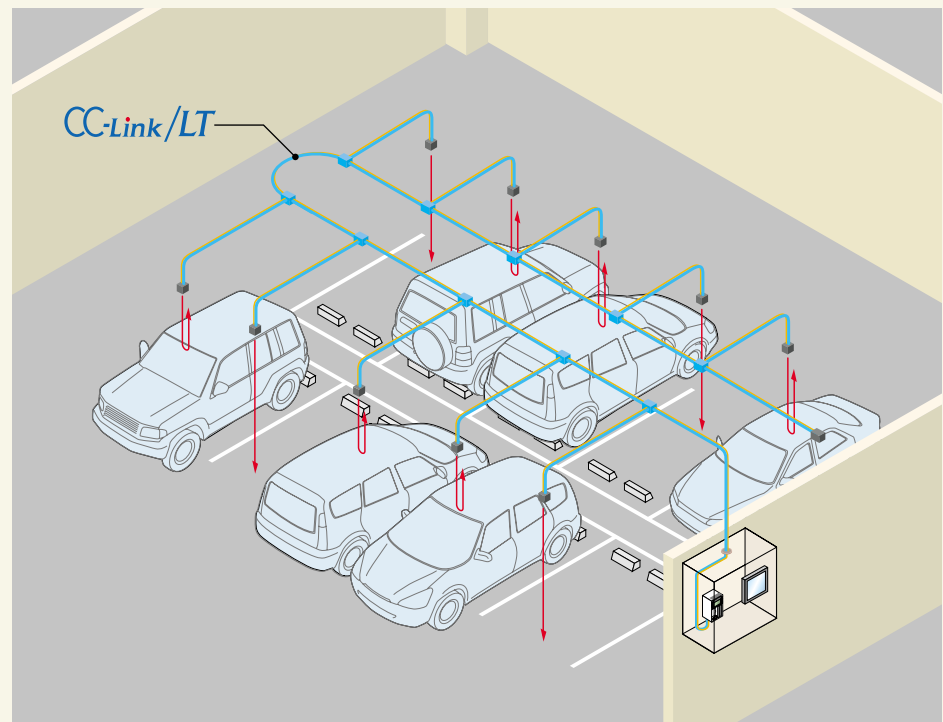
CC-Link/LT

Parameter-free setup work

CC-Link/LT

Easy installation and setting up

CC-Link/LT



## Master/local modules, bridge modules

### MELSEC iQ-R Series

#### RJ61BT11

CC-Link V2



Occupied I/O points: 32 points  
Occupied stations (as local stations): 1 to 4\*1 (selectable)

### MELSEC-Q Series

#### QJ61BT11N

CC-Link V2



Occupied I/O points: 32 points  
Occupied stations (as local stations): 1 to 4\*1 (selectable)

### MELSEC-L Series CPU (with master/local station function)

#### L26CPU-BT(Sink type output) L26CPU-PBT(Source type output)

CC-Link V2



Occupied I/O points: 32 points  
Occupied stations (as local stations): 1 to 4\*1 (selectable)  
(CPU part)  
I/O points: 4096 points  
I/O device points: 8192 points  
Program size: 260K steps

### MELSEC-L Series

#### LJ61BT11

CC-Link V2



Occupied I/O points: 32 points  
Occupied stations (as local stations): 1 to 4\*1 (selectable)

### MELSEC-FX Series

#### FX3U-16CCL-M

CC-Link V2



Occupied I/O points: 8 points  
Can be used only as a master station

\*1 The number of occupied stations at a local station is set by a parameter in GX Works3, GX Works2 or GX Developer.



## CC-Link IE Field Network - CC-Link Bridge module

### NZ2GF-CCB



CC-Link IE Field Network intelligent device station  
with CC-Link master station function\*1

\*1 Compatible with CC-Link Ver.1.10 Remote I/O and remote device stations.

## CC-Link-AnyWire Bitty Bridge module

### NZ2AW1C1BY



Remote device station  
Occupied stations: 1 to 4  
with AnyWire Bitty master station function

## CC-Link-AnyWire DB A20 Bridge module

### NZ2AW1C2D2

CC-Link V2



Remote device station (for CC-Link Ver.2)  
Occupied stations: 4  
with AnyWire DB A20 master station function

## CC-Link-AnyWireASLINK Bridge module

### NZ2AW1C2AL

CC-Link V2



Remote device station  
Occupied stations: 1 to 4  
with AnyWireASLINK master station function

# Remote I/O modules

## Terminal block type

### Screw terminal block type

### AJ65SBTB□-□



### Features

- From the lineup including a variety of products, you can select the most suitable type to match the connection method and I/O specifications of external devices.
- The protector covering the terminal block prevents the user from touching charged parts, allowing direct installation to a target machine.

### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	External connection
AJ65SBTB2N-8A	AC	-	≤ 20 ms	100 V AC/7 mA	2-wire type
AJ65SBTB2N-16A	AC	-	≤ 20 ms	100 V AC/7 mA	2-wire type
AJ65SBTB1-8D	DC	Positive/Negative common	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB3-8D	DC	Positive/Negative common	≤ 1.5 ms	24 V DC/7 mA	3-wire type
AJ65SBTB1-16D	DC	Positive/Negative common	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB1-16D1	DC	Positive/Negative common	≤ 0.2 ms	24 V DC/5 mA	1-wire type
AJ65SBTB3-16D	DC	Positive/Negative common	≤ 1.5 ms	24 V DC/7 mA	3-wire type
AJ65SBTB3-16D5	DC	Positive/Negative common	≤ 1.5 ms	5 V DC/4 mA	3-wire type
AJ65SBTB3-16KD	DC	Positive/Negative common	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	3-wire type
AJ65SBTB1-32D	DC	Positive/Negative common	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB1-32D1	DC	Positive/Negative common	≤ 0.2 ms	24 V DC/5 mA	1-wire type
AJ65SBTB1-32D5	DC	Positive/Negative common	≤ 1.5 ms	5 V DC/4 mA	1-wire type
AJ65SBTB1-32KD	DC	Positive/Negative common	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	1-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65SBTB1-8T	Transistor Sink type	8	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	1-wire type
AJ65SBTB1-8T1	Transistor Sink type	8	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65SBTB2-8T	Transistor Sink type	8	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	2-wire type
AJ65SBTB2-8T1	Transistor Sink type	8	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type
AJ65SBTB1-16T	Transistor Sink type	16	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	1-wire type
AJ65SBTB1-16T1	Transistor Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65SBTB2-16T	Transistor Sink type	16	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	2-wire type
AJ65SBTB2-16T1	Transistor Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type
AJ65SBTB1-32T	Transistor Sink type	32	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	1-wire type
AJ65SBTB1-32T1	Transistor Sink type	32	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65SBTB1-8TE	Transistor Source type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type
AJ65SBTB1-16TE	Transistor Source type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type
AJ65SBTB1B-16TE1	Transistor Source type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65SBTB1-32TE1	Transistor Source type	32	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65SBTB2N-8R	Relay	8	-	No	24 V DC, 240 V AC 2 A	2-wire type
AJ65SBTB2N-16R	Relay	16	-	No	24 V DC, 240 V AC 2 A	2-wire type
AJ65SBTB2N-8S	Triac	8	≤ 1.5 mA (100 V AC)/≤ 3 mA (200 V AC)	No	100 to 240 V AC 0.6 A	2-wire type
AJ65SBTB2N-16S	Triac	16	≤ 1.5 mA (100 V AC)/≤ 3 mA (200 V AC)	No	100 to 240 V AC 0.6 A	2-wire type

### I/O combined modules

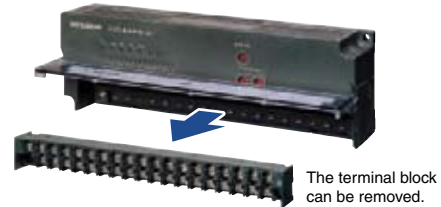
Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output type	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65SBTB32-8DT	DC Positive common	4	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	4	≤ 0.25 mA	Yes	24 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB32-8DT2	DC Positive common	4	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	4	≤ 0.1 mA	No	24 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB1-16DT	DC Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.25 mA	Yes	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-16DT1	DC Positive common	8	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	8	≤ 0.25 mA	Yes	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-16DT2	DC Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-16DT3	DC Positive common	8	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB32-16DT	DC Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.25 mA	Yes	24 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB32-16DT2	DC Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB32-16KDT2	DC Positive common	8	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB32-16KDT8	DC Positive common	8	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	12 V DC/11 mA	Transistor Sink type	8	≤ 0.1 mA	No	12 V DC 0.5 A	3-wire type/2-wire type
AJ65SBTB1-32DT	DC Positive common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	16	≤ 0.25 mA	Yes	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32DT1	DC Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.25 mA	Yes	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32DT2	DC Positive common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	16	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32DT3	DC Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32KDT2	DC Positive common	16	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	Transistor Sink type	16	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32KDT8	DC Positive common	16	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	12 V DC/11 mA	Transistor Sink type	16	≤ 0.1 mA	No	12 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB1-32DTE1	DC Negative common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor Source type	16	≤ 0.1 mA	No	24 V DC 0.5 A	1-wire type/1-wire type
AJ65SBTB32-16DR	DC Positive/Negative common	8	≤ 1.5 ms	24 V DC/7 mA	Relay	8	-	No	24 V DC/240 V AC 2 A	3-wire type/2-wire type
AJ65SBTB32-16KDR	DC Positive/Negative common	8	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	Relay	8	-	No	24 V DC/240 V AC 2 A	3-wire type/2-wire type

## Screw/2-piece terminal block type

## AJ65BTB□-□

### Features

- ⊙ The I/O terminal block is removable.
- ⊙ The 2-piece structure allows easy servicing as the module can be replaced without rewiring.



### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	External connection
AJ65BTB1-16D	DC Positive/Negative common	16	≤ 10 ms	24 V DC/7 mA	1-wire type
AJ65BTB2-16D	DC Positive/Negative common	16	≤ 10 ms	24 V DC/7 mA	2-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65BTB1-16T	Transistor Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65BTB2-16T	Transistor Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type
AJ65BTB2-16R	Relay -	16	-	No	24 V DC/240 V AC 2 A	2-wire type

### I/O combined modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65BTB1-16DT	DC Positive common	8	≤ 10 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type/1-wire type
AJ65BTB2-16DT	DC Positive common	8	≤ 10 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type/2-wire type
AJ65BTB2-16DR	DC Positive common/Negative common	8	≤ 10 ms	24 V DC/7 mA	Relay -	8	-	No	24 V DC/240 V AC 2 A	2-wire type/2-wire type

## A2C form terminal block type

## AJ65DBTB□-32□

### Features

- ⊙ The I/O terminal block is removable.
- ⊙ The modules can be installed to the same position of A2C form I/O modules. New installation holes are unnecessary.



### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	External connection
AJ65DBTB1-32D	DC Positive/Negative common	32	≤ 10 ms	24 V DC/5 mA	1-wire type

### Output modules

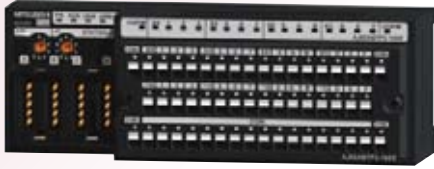
Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65DBTB1-32T1	Transistor Sink type	32	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type
AJ65DBTB1-32R	Relay -	32	-	No	24 V DC/240 V AC 2 A	1-wire type

### I/O combined modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65DBTB1-32DT1	DC Positive common	16	≤ 10 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	1-wire type/1-wire type
AJ65DBTB1-32DR	DC Positive/Negative common	16	≤ 10 ms	24 V DC/5 mA	Relay -	16	-	No	24 V DC/240 V AC 2 A	1-wire type/1-wire type

## Spring clamp terminal block push-in type

## AJ65ABTP3-16D AJ65ABTP3-16DE



### Features

- ⊙ Wiring time can be reduced using push-in type terminal blocks.
- ⊙ Wire disconnections or short-circuits can be checked.
- ⊙ Wiring errors from external power supply can be checked.
- ⊙ The 2-piece structure allows easy servicing as the module can be replaced without rewiring.

\* These modules are used as remote device stations.

### Input modules with diagnostic functions

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
AJ65ABTP3-16D	DC	Positive common	16	≤ 1.5 ms	24 V DC/6 mA	3-wire type
AJ65ABTP3-16DE	DC	Negative common	16	≤ 1.5 ms	24 V DC/6 mA	3-wire type

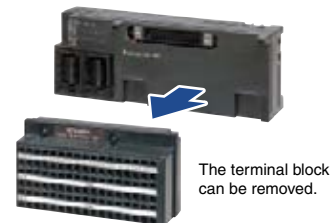
## Spring clamp terminal block type

## AJ65VBTS□-□



### Features

- ⊙ Wiring time can be reduced because no screw tightening and retightening are required.
- ⊙ The 2-piece structure allows easy servicing as the module can be replaced without rewiring.
- ⊙ DIN rail or screw installation is selectable.
- ⊙ The 3-wire sensor can be connected.



The terminal block can be removed.

### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
AJ65VBTS3-16D	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	3-wire type
AJ65VBTS3-32D	DC	Positive common	32	≤ 1.5 ms	24 V DC/5 mA	3-wire type

### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65VBTS2-16T	Transistor	Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type
AJ65VBTS2-32T	Transistor	Sink type	32	≤ 0.1 mA	No	12/24 V DC 0.5 A	2-wire type

### I/O combined modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65VBTS32-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	3-wire type/2-wire type
AJ65VBTS32-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.1 mA	No	12/24 V DC 0.5 A	3-wire type/2-wire type



## ► Sensor connector type

### e-CON type

### AJ65VBTCE□-□



#### Features

- ◎ Industry-standard e-CON has been adopted.
- ◎ Easy wiring with sensor connectors
- ◎ DIN rail or screw installation is selectable.
- ◎ The 3-wire sensor can be connected.

#### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
AJ65VBTCE3-8D	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	3-wire type
AJ65VBTCE3-16D	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	3-wire type
AJ65VBTCE3-32D	DC	Positive common	32	≤ 1.5 ms	24 V DC/5 mA	3-wire type
AJ65VBTCE3-16DE	DC	Negative common	16	≤ 1.5 ms	24 V DC/5 mA	3-wire type
AJ65VBTCE3-32DE	DC	Negative common	32	≤ 1.5 ms	24 V DC/5 mA	3-wire type

#### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65VBTCE2-8T	Transistor	Sink type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
AJ65VBTCE2-16T	Transistor	Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
AJ65VBTCE3-16TE	Transistor	Source type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	3-wire type

#### I/O combined modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65VBTCE32-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	8	≤ 0.1 mA	Yes	24 V DC 0.1 A	3-wire type/2-wire type
AJ65VBTCE3-16DTE	DC	Negative common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Source type	8	≤ 0.1 mA	Yes	24 V DC 0.1 A	3-wire type/3-wire type
AJ65VBTCE32-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.1 mA	Yes	24 V DC 0.1 A	3-wire type/2-wire type
AJ65VBTCE3-32DTE	DC	Negative common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Source type	16	≤ 0.1 mA	Yes	24 V DC 0.1 A	3-wire type/3-wire type

### One-touch connector type

### AJ65SBTC□-□ AJ65VBTCU□-□



#### Features

- ◎ Easy wiring with sensor connectors
- ◎ The modules can be installed in six orientations.

#### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
AJ65VBTCU3-8D1	DC	Positive common	8	≤ 0.2 ms	24 V DC/5 mA	3-wire type
AJ65VBTCU3-16D1	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	3-wire type
AJ65SBTC4-16DN	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	4-wire type
AJ65SBTC4-16DE	DC	Negative common	16	≤ 1.5 ms	24 V DC/5 mA	4-wire type
AJ65SBTC1-32D	DC	Positive/Negative common	32	≤ 1.5 ms	24 V DC/5 mA	1-wire type
AJ65SBTC1-32D1	DC	Positive/Negative common	32	≤ 0.2 ms	24 V DC/5 mA	1-wire type

#### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65VBTCU2-8T	Transistor	Sink type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
AJ65VBTCU2-16T	Transistor	Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
AJ65SBTC1-32T	Transistor	Sink type	32	≤ 0.25 mA	Yes	12/24 V DC 0.1 A	1-wire type
AJ65SBTC1-32T1	Transistor	Sink type	32	≤ 0.1 mA	No	12/24 V DC 0.1 A	1-wire type

#### I/O combined modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65SBTC4-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	8	≤ 0.25 mA	Yes	24 V DC 0.5 A	4-wire type
AJ65SBTC4-16DT2	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	8	≤ 0.1 mA	No	24 V DC 0.5 A	4-wire type
AJ65SBTC1-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.25 mA	Yes	24 V DC 0.1 A	1-wire type/1-wire type
AJ65SBTC1-32DT1	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.25 mA	Yes	24 V DC 0.1 A	1-wire type/1-wire type
AJ65SBTC1-32DT2	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.1 mA	No	24 V DC 0.1 A	1-wire type/1-wire type
AJ65SBTC1-32DT3	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink type	16	≤ 0.1 mA	No	24 V DC 0.1 A	1-wire type/1-wire type

## 40-pin connector type (FCN connector type)

## AJ65SBTCF□-□ AJ65BTC□-□ AJ65VBTCF□-□



### Features

- ◎The 40-pin connector (FCN connector type) allows connection of various devices.
- ◎The modules can be installed in six orientations.

### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	External connection	
AJ65SBTCF1-32D	DC	Positive/Negative common	32	≤ 1.5 ms	24 V DC/5 mA	1-wire type
AJ65BTC1-32D	DC	Positive/Negative common	32	≤ 10 ms	24 V DC/5 mA	1-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65SBTCF1-32T	Transistor Sink type	32	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type
AJ65BTC1-32T	Transistor Sink type	32	≤ 0.1 mA	No	12/24 V DC 0.1 A	1-wire type

### I/O combined modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection	
AJ65SBTCF1-32DT	DC	Positive/Negative common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type /1-wire type
AJ65VBTCF1-32DT1	DC	Positive/Negative common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type /1-wire type
AJ65VBTCFJ1-32DT1	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor Sink type	16	≤ 0.1 mA	Yes	24 V DC 0.1 A	1-wire type /1-wire type

## Waterproof connector type

## AJ65FBTA□-16□



### Features

- ◎Waterproof type modules are compliant with the IP67 standard for water resistance.
- ◎Modules can be replaced without stopping the system.
- ◎Easy connection without using any tool reduces wiring time.
- ◎Built-in terminating resistor (selected by 110Ω/130Ω switch)
- ◎The modules are mountable in six orientations.

### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	External connection	
AJ65FBTA4-16D	DC	Positive common	16	≤ 1.5 ms	24 V DC/7 mA	2 to 4-wire type
AJ65FBTA4-16DE	DC	Negative common	16	≤ 1.5 ms	24 V DC/7 mA	2 to 4-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
AJ65FBTA2-16T	Transistor Sink type	16	≤ 0.25 mA	Yes	12/24 V DC 0.5 A	2-wire type
AJ65FBTA2-16TE	Transistor Source type	16	≤ 0.30 mA	Yes	12/24 V DC 1.0 A	2-wire type

### I/O combined modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection	
AJ65FBTA42-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.25 mA	Yes	24 V DC 0.5 A	2 to 4-wire type /2-wire type
AJ65FBTA42-16DTE	DC	Negative common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Source type	8	≤ 0.30 mA	Yes	24 V DC 1.0 A	2 to 4-wire type /2-wire type

# Safety relay modules

## ▶ Terminal block type

### Spring clamp terminal block type

### QS90SR2SP-CC QS90SR2SN-CC



#### Features

- ◎ The safety system can be added easily.  
Independent safety functions (Category 4 of EN954-1, PL e of ISO 13849-1) can be added by simply connecting the existing CC-Link cable.
- ◎ Reduced wiring with the CC-Link connection  
The special wiring to monitor the status of the safety relay module is not required.  
The cables are nicely organized inside/outside of the control panel.
- ◎ Safety status visibility  
The cause of the safety system activation can be easily investigated since the status of safety outputs/inputs and internal relays are monitored.

Item	QS90SR2SP-CC	QS90SR2SN-CC
Safety standard	Category 4 of EN954-1, PL e of ISO 13849-1	
Number of safety input points	1 point (2 inputs)	
Number of start-up input points	1 point	
Input format	P type (positive common/positive common)	N type (positive common/negative common)
Number of safety output points	1 point (3 outputs)	
Rated load current	Category 4: 3.6 A/point    Category 3: 5.0 A/point (250 V AC/30 V DC)	
Response time	Output OFF	≤ 20 ms (safety input OFF → safety output OFF)
	Output ON	≤ 50 ms (safety input ON → safety output ON)
Module power supply	20.4...26.4 V DC (ripple ratio: ≤ 5 %)	
Safety power supply	20.4...26.4 V DC (ripple ratio: ≤ 5 %)	
Number of extension modules	Up to three extension safety relay modules can be connected.	
External connection method	Two-piece spring clamp terminal block	
Relay life	Mechanical	Five million times or more
	Electrical	One hundred thousand times or more

# Analog modules

## ▶ Connector type

### Analog input modules

#### One-touch connector type



**AJ65VBTCU-68ADV N**  
**AJ65VBTCU-68ADIN**



#### Voltage input module

Model	Number of channels	Number of occupied points	Station type
AJ65VBTCU-68ADV N	8	1/3 *1	Remote device

#### Current input module

Model	Number of channels	Number of occupied points	Station type
AJ65VBTCU-68ADIN	8	1/3 *1	Remote device

\*1: Three stations are occupied in Ver. 1 mode, or one station is occupied in Ver. 2 mode.

### Analog output modules

#### One-touch connector type



**AJ65VBTCU-68DAVN**



#### Voltage output module

Model	Number of channels	Number of occupied points	Station type
AJ65VBTCU-68DAVN	8	1/3 *1	Remote device

## ▶ Terminal block type

### Analog input modules

#### Screw terminal block type

**AJ65SBT-64AD**  
**AJ65SBT2B-64AD**  
(High accuracy, high resolution,  
high speed, 2-piece terminal block type)



#### Voltage/current input module

Model	Number of channels	Number of occupied points	Station type
AJ65SBT-64AD	4	1	Remote device
AJ65SBT2B-64AD	4	1	Remote device

### Analog input modules

#### Screw/2-piece terminal block type

**AJ65BT-64AD**



#### Voltage/current input module

Model	Number of channels	Number of occupied points	Station type
AJ65BT-64AD	4	2	Remote device

### Temperature input modules

#### Screw/2-piece terminal block type

**AJ65SBT2B-64TD**  
**AJ65SBT2B-64RD3**



### Temperature input modules

#### Screw/2-piece terminal block type

**AJ65BT-68TD**  
**AJ65BT-64RD3**  
**AJ65BT-64RD4**



### Analog output modules

#### Screw terminal block type

**AJ65SBT-62DA**  
**AJ65SBT2B-64DA**  
(High resolution, high speed,  
2-piece terminal block type)



#### Voltage/current output module

Model	Number of channels	Number of occupied points	Station type
AJ65SBT-62DA	2	1	Remote device
AJ65SBT2B-64DA	4	1	Remote device

### Analog output modules

#### Screw/2-piece terminal block type

**AJ65BT-64DAV**  
**AJ65BT-64DAI**



#### Voltage output module

Model	Number of channels	Number of occupied points	Station type
AJ65BT-64DAV	4	2	Remote device

#### Current output module

Model	Number of channels	Number of occupied points	Station type
AJ65BT-64DAI	4	2	Remote device

### Thermocouple temperature input module

Model	Number of channels	Number of occupied points	Station type
AJ65SBT2B-64TD	4	1	Remote device

### RTD input module

Model	Number of channels	Number of occupied points	Station type
AJ65SBT2B-64RD3	4	1	Remote device

### Thermocouple temperature input module

Model	Number of channels	Number of occupied points	Station type
AJ65BT-68TD	8	4	Remote device

### Platinum resistance temperature sensor Pt 100 temperature input modules

Model	Number of channels	Number of occupied points	Station type
AJ65BT-64RD3	4	4	Remote device
AJ65BT-64RD4	4	4	Remote device

## High-speed counter modules

**AJ65BT-D62**  
**AJ65BT-D62D**  
**AJ65BT-D62D-S1**



Item	AJ65BT-D62	AJ65BT-D62D	AJ65BT-D62D-S1
Pulse input	DC input	Differential input	Differential input
Preset input	DC input	DC input	Differential input
Counting range	0...16777215 (24-bit binary)	0...16777215 (24-bit binary)	0...16777215 (24-bit binary)
Number of occupied stations	4	4	4
Station type	Remote device	Remote device	Remote device

## Positioning module

**AJ65BT-D75P2-S3**



Item	AJ65BT-D75P2-S3
Description	2 axes (independent, linear and circular interpolation at the same time), 400 kpps, pulse count from -2147483648...2147483647
Number of occupied stations	4
Station type	Intelligent device

## RS-232 interface module

**AJ65BT-R2N**



Item	AJ65BT-R2N
Description	RS-232 1 channel, DC input 2 points/transistor output 2 points
Number of occupied stations	1
Station type	Intelligent device

## WS Series interface module

**WS0-GCC100202**



### Features

© Interface module for connecting a safety controller as a CC-Link remote device station.

Item	WS0-GCC100202
Description	WS Series interface module
Number of occupied stations	1...4
Station type	Remote device station
Applicable programmable controller	Safety controller • WS series

## FX Series interface block

**FX3U-64CCL**

**CC-Link V2**



### Features

© Interface block for connecting Mitsubishi micro-programmable controllers FX3G, FX3U, FX3GC, FX3UC Series as CC-Link intelligent device stations

Item	FX3U-64CCL
Description	FX series interface block
Number of occupied stations	1...4
Station type	Intelligent device station
Applicable programmable controller	Mitsubishi micro-programmable controllers • FX3G, FX3U Series • FX3GC, FX3UC Series (FX2NC-CNV-IF or FX3UC-1PS-5V required)

**FX2N-32CCL**



### Features

© Interface block for connecting Mitsubishi micro-programmable controllers FX3G, FX3U, FX3GC, FX3UC Series as CC-Link remote device stations

Item	FX2N-32CCL
Description	FX series interface block
Number of occupied stations	1...4
Station type	Remote device station
Applicable programmable controller	Mitsubishi micro-programmable controllers • FX3G, FX3U Series • FX3GC, FX3UC Series (FX2NC-CNV-IF or FX3UC-1PS-5V required)



# Network interface boards

## Q80BD-J61BT11N Q81BD-J61BT11



### Features

- Personal computers and other devices equipped with a PCI or PCI Express bus can be incorporated into the CC-Link system.
- Can be used as a CC-Link Ver. 2 compatible master station, standby master station or local station.
- Drivers compatible with each of the following OS are included.  
(Windows®8.1, Windows®8, Windows 7®, Windows Vista®(32 bits), Windows® XP(32 bits), Windows Server® 2012 Standard, Windows Server® 2008, Windows Server® 2003 R2)

Item	Q80BD-J61BT11N	Q81BD-J61BT11
Description	PCI bus slot (half size)	PCI Express X1, X2, X4, X8, X16 slot (half size)
Number of occupied stations	1...4	1...4
Station type	Master station, standby master station or local station	Master station, standby master station or local station

## ECP-CL2BD



Mitsubishi Electric Engineering Corporation

### Features

- Control and monitor CC-Link devices using compact PCI bus interface (cPCI) compatible industrial computers.
- The CC-Link network interface board can operate as a master or local station and is compatible with CC-Link version 2.
- Configure CC-Link parameters using the included software.
- Function libraries are available to help create user programs.

Item	ECP-CL2BD
Description	CC-Link V2 compatible Master/local interface board (CompactPCI bus slot 3U size)
Number of occupied stations	1...4
Station type	Master station, standby master station or local station

# Repeater modules

## Repeater module

## AJ65FBTA-RPH AJ65SBT-RPS/RPG

## AJ65BTS-RPH AJ65BT-RPI-10A/10B

## AJ65SBT-RPT



### Features

- The following 5 types are available for various applications.
- Low profile waterproof type repeater hub module: Star topology, trunk line extension, waterproof structure
- Spring clamp terminal block type repeater hub module: Star topology, trunk line extension, spring clamp terminal block type
- Repeater module (T-branch): T-branch, trunk line extension
- Optical repeater module: Wiring in high noise environment, trunk line extension
- Space optical repeater module: Communications on linear mobile systems

Type	Model	Description	Number of occupied points	Station type
Low profile waterproof type repeater hub module	AJ65FBTA-RPH	Start wiring of up to 8 branches. Wiring of max. length matched to transmission speed is possible for each branch. Waterproof (IP67) structure	-	-
Spring clamp terminal block type repeater hub module	AJ65BTS-RPH	Start wiring of up to 8 branches. Wiring of max. length matched to transmission speed is possible for each branch. Spring clamp terminal block type	-	-
Repeater module (T-branch)	AJ65SBT-RPT	Maximum number of connected levels: 10, T-branch wiring is possible.	-	-
Optical repeater modules	AJ65SBT-RPS	For SI/QSI-type optical fiber cables (Use two modules as a set). Maximum number of connected levels: 3, maximum transmission distance: 500 m (SI)/1000 m (QSI)	-	-
	AJ65SBT-RPG	For GI-type optical fiber cables (Use two modules as a set). Maximum number of connected levels: 2, maximum transmission distance: 2000 m	-	-
Space optical repeater modules	AJ65BT-RPI-10A	Use AJ65BT-RPI-10A and AJ65BT-RPT-10B as a set. Transmission speeds of 156kbps, 625kbps and 2.5Mbps are supported.	-/1	Remote I/O station when occupying one station
	AJ65BT-RPI-10B	Wireless transmission distances from 0 to 100 m via infrared light. Optical communication status monitor function	-/1	Remote I/O station when occupying one station

# Optional parts for I/O modules

<p><b>One-touch connector plug</b></p> <p><b>A6CON-P214</b> (20pcs) <b>A6CON-P220</b> (20pcs) <b>A6CON-P514</b> (20pcs) <b>A6CON-P520</b> (20pcs)</p>  <p>©Applicable models AJ65SBTC□-□ remote I/O module AJ65VBTCU□-□ remote I/O module AJ65VBTCU-□ analog module</p>	<p><b>One-touch connector plug for communication</b></p> <p><b>A6CON-L5P</b> (10pcs)</p>  <p>©Applicable models *4 Only FANC-110SBH, CS-110, and FA-CBL200PBSH can be used.</p>	<p><b>One-touch connector plug for power supply and FG</b></p> <p><b>A6CON-PW5P</b> (10pcs) <b>A6CON-PW5P-SOD</b> (10pcs)</p>  <p>©Applicable models *5</p>	<p><b>One-touch connector plug with terminating resistor</b></p> <p><b>A6CON-TR11N</b> (1pc)</p>  <p>©Applicable models *4</p>
<p><b>Online connector for communication</b></p> <p><b>A6CON-LJ5P</b> (5pcs)</p>  <p>©Applicable models *4</p>	<p><b>Online connector for power supply</b></p> <p><b>A6CON-PWJ5P</b> (5pcs)</p>  <p>©Applicable models *5</p>	<p><b>Protective cover for sensor connector type (e-CON) module</b></p> <p><b>A6CVR-VCE8</b> (10pcs) <b>A6CVR-VCE16</b> (10pcs)</p>  <p>©Applicable models AJ65VBTC□-8□ remote I/O module AJ65VBTC□-16□ remote I/O module</p>	<p><b>Protective cover</b></p> <p><b>A6CVR-8</b> (10pcs) <b>A6CVR-16</b> (10pcs) <b>A6CVR-32</b> (10pcs)</p>  <p>©Applicable models AJ65SBTB□-□ remote I/O module AJ65SBTC□-□ remote I/O module</p>
<p><b>40-pin connector (FCN connector)</b></p> <p><b>A6CON1</b> (1pc) <b>A6CON2</b> (1pc) <b>A6CON3</b> (1pc) <b>A6CON4</b> (1pc)</p>  <p>©Applicable models AJ65SBTC□-□ remote I/O module AJ65BTFC□-□ remote I/O module AJ65VBTCF□-□ remote I/O module</p>	<p><b>Protective cap for unused connector</b></p> <p><b>A6CAP-WP2</b> (20pcs)</p>  <p>©Applicable models AJ65FBTA□-□ remote I/O module</p>		

\*4: AJ65VBTS□-□ remote I/O module, AJ65VBTC□-□ remote I/O module, AJ65VBTCU□-□ remote I/O module, AJ65ABTP□-□ remote I/O module, AJ65VBTCU-□ analog module, AJ65SBT-CLB CC-Link to CC-Link/LT bridge module  
 \*5: AJ65VBTS□-□ remote I/O module, AJ65VBTC□-□ remote I/O module, AJ65VBTCU□-□ remote I/O module, AJ65ABTP□-□ remote I/O module, AJ65VBTCU-□ analog module

## Master module

### MELSEC-QS Series

#### QS0J61BT12



Occupied I/O points: 32 points

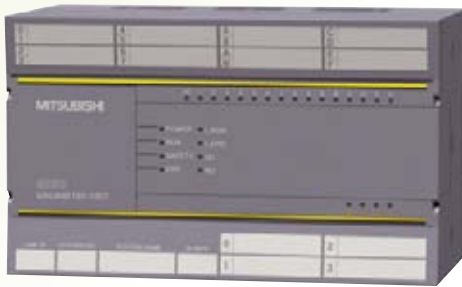
Can be used only as a master station

# Remote I/O modules

## ▶ Terminal block type

### Screw terminal block type

### QS0J65BTB2-12DT



#### Features

- ◎ The system complying with Category 3 or Category 4 of EN954-1 can be configured by the combination of wiring and parameters.
- ◎ The fail-safe function is equipped. When a failure occurs inside the module, the self-diagnostics function detects the failure and turns OFF the output.
- ◎ A dark test (contact stuck diagnostics) enables an error diagnostics including external safety devices.

#### I/O combined module

Model	Input format		Number of input points	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage /current	External connection
QS0J65BTB2-12DT	DC	Negative common	8/16	24 V DC/4.6 mA	Transistor	Source + sink/ Source + source type	4/2	≤ 0.5 mA	Yes	24 V DC/0.5 A	2-wire type /2-wire type

### Spring clamp terminal block type

### QS0J65BTS2-8D QS0J65BTS2-4T



#### Features

- ◎ The remote I/O module which has obtained the highest safety level applicable to programmable controllers, and the safety-related system with high security can be configured.
- ◎ The system complying with Category 3 or Category 4 of EN954-1 can be configured by the combination of wiring and parameters.

#### Input module

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
QS0J65BTS2-8D	DC	Negative common	8/16	≤ 11.2 ms	24 V DC/5.9 mA	2-wire type

#### Output module

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
QS0J65BTS2-4T	Transistor	Source + sink/Source + source type	4/2	≤ 0.5 mA	Yes	24 V DC/0.5 A	2-wire type

## Master/bridge modules

### MELSEC-Q Series

#### QJ61CL12



Current consumption : 130 mA (5 V DC, supplied from programmable controller),  
 28 mA (24 V DC, supplied from power adapter)  
 Current at start-up : 70 mA (24 V DC, supplied from power adapter)  
 Weight : 0.09 kg

### MELSEC-L Series

#### LJ61CL12



Current consumption : 160 mA (5 V DC, supplied from programmable controller),  
 30 mA (24 V DC, supplied from power adapter)  
 Current at start-up : 70 mA (24 V DC, supplied from power adapter)  
 Weight : 0.12 kg

### MELSEC-FX<sub>3UC</sub> Series

#### FX<sub>3UC</sub>-32MT-LT (-2)



Current consumption : 7 W (main module only)  
 Built-in power supply : 24 V DC 350 mA (for CC-Link/LT network)  
 Weight : 0.25 kg  
 \* CC-Link/LT parameters for FX<sub>3UC</sub>-32MT-LT-2 can be configured with GX Works2,  
 GX Developer or display modules.

### MELSEC-FX Series

#### FX<sub>2N</sub>-64CL-M



Current consumption : 190 mA (5 V DC, supplied from programmable controller),  
 25 mA (2 V DC, supplied from power adapter)  
 Current at start-up : 35 mA (24 V DC, supplied from power adapter)  
 Weight : 0.15 kg

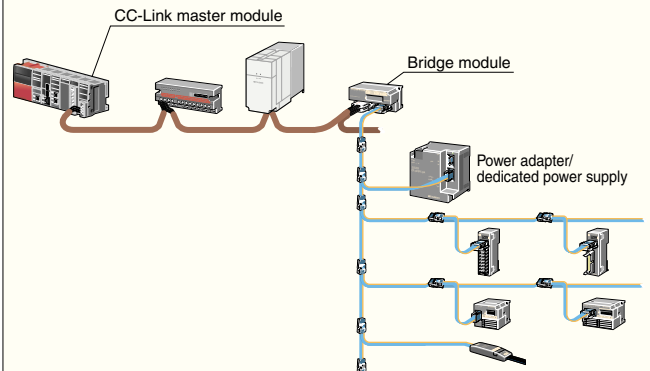
### CC-Link to CC-Link/LT bridge module

#### AJ65SBT-CLB



Current consumption : 75 mA (24 V DC, supplied from power adapter)  
 Current at start-up : 165 mA (24 V DC, supplied from power adapter)  
 Weight : 0.09 kg

### ■ Configuration example of bridge module





# Remote I/O modules

## ► Terminal block type

### Screw terminal block type

**CL1X4-D1B2**  
**CL1Y4-R1B1**  
**CL1XY8-DT1B2**

**CL2X8-D1B2**  
**CL2Y8-TP1B2**  
**CL1XY8-DR1B2**

**CL1Y4-T1B2**  
**CL1XY4-DT1B2**

**CL1Y4-R1B2**  
**CL1XY4-DR1B2**



### Features

- ⊙ The industry's most compact size
- ⊙ Terminal block cover with nameplate showing connected devices
- ⊙ Input modules with positive/negative common shared
- ⊙ Terminal block structure enabling simple connection of 2-wire sensors or other loads
- ⊙ The modules can be installed in six orientations.

### Input modules

Model	Input format	Input format	Number of input points	Input response time	Rated input voltage/current	External connection
CL1X4-D1B2	DC	Positive/Negative common	4	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	2-wire type
CL2X8-D1B2	DC	Positive/Negative common	8	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	2-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
CL1Y4-T1B2	Transistor Sink type	4	≤ 0.1 mA	No	12/24 V DC 0.1 A	2-wire type
CL2Y8-TP1B2	Transistor Sink type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
CL1Y4-R1B2	Relay -	4	-	No	30 V DC/250 V AC 2 A	2-wire type
CL1Y4-R1B1	Relay -	4	-	No	30 V DC/250 V AC 2 A	1-wire type

### I/O combined modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage /current	External connection
CL1XY4-DT1B2	DC Positive/Negative common	2	≤ 1.5 ms	24 V DC/4 mA	Transistor Sink type	2	≤ 0.1 mA	No	12/24 V DC 0.1 A	2-wire type /2-wire type
CL1XY8-DT1B2	DC Positive/Negative common	4	≤ 1.5 ms	24 V DC/4 mA	Transistor Sink type	4	≤ 0.1 mA	No	12/24 V DC 0.1 A	2-wire type /2-wire type
CL1XY4-DR1B2	DC Positive/Negative common	2	≤ 1.5 ms	24 V DC/4 mA	Relay -	2	-	No	30 V DC/250 V AC 2 A	2-wire type /2-wire type
CL1XY8-DR1B2	DC Positive/Negative common	4	≤ 1.5 ms	24 V DC/4 mA	Relay -	4	-	No	30 V DC/250 V AC 2 A	2-wire type /2-wire type

### Spring clamp terminal block type

**CL1X4-D1S2**  
**CL2Y8-TP1S2**

**CL1Y4-T1S2**  
**CL2Y8-TPE1S2**

**CL2X8-D1S2**



### Features

- ⊙ Retightening is not required. The applicable wire size is 0.3 to 1.5 mm<sup>2</sup> (22 to 16 AWG).
- ⊙ Two-piece structure (The terminal block section is removable.)
- ⊙ Input modules with positive/negative common shared
- ⊙ Source type output module (8 points) is available.
- ⊙ The modules can be installed in six orientations.

### Input modules

Model	Input format	Input format	Number of input points	Input response time	Rated input voltage/current	External connection
CL1X4-D1S2	DC	Positive/Negative common	4	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	2-wire type
CL2X8-D1S2	DC	Positive/Negative common	8	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	2-wire type

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
CL1Y4-T1S2	Transistor Sink type	4	≤ 0.1 mA	No	12/24 V DC 0.1 A	2-wire type
CL2Y8-TP1S2	Transistor Sink type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type
CL2Y8-TPE1S2	Transistor Source type	8	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	2-wire type

## ► Connector type

### Sensor connector type (e-CON)

CL1X4-D1C3    CL1Y4-T1C2    CL2X8-D1C3V  
 CL2Y8-TP1C2V    CL2X16-D1C3V    CL2Y16-TP1C2V  
 CL2XY16-DTP1C5V



#### Features

- ◎The industry's most compact size
- ◎DIN rail or screw installation is selectable.
- ◎The 3-wire sensor can be connected.

#### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
CL1X4-D1C3	DC	Positive common	4	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	3-wire type
CL2X8-D1C3V	DC	Positive common	8	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	3-wire type
CL2X16-D1C3V	DC	Positive common	16	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	3-wire type

#### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
CL1Y4-T1C2	Transistor	Sink type	4	≤ 0.1 mA	No	24 V DC 0.1 A	2-wire type
CL2Y8-TP1C2V	Transistor	Sink type	8	≤ 0.1 mA	Yes	24 V DC 0.1 A	2-wire type
CL2Y16-TP1C2V	Transistor	Sink type	16	≤ 0.1 mA	Yes	24 V DC 0.1 A	2-wire type

#### I/O combined modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage /current	External connection
CL2XY16-DTP1C5V	DC	Positive common	8	≤ 0.5 ms/ ≤ 1.5 ms	24 V DC/4 mA	Transistor	Sink type	8	≤ 0.1 mA	Yes	24 V DC 0.1 A	3-wire type/ 2-wire type

### MIL connector type

CL2X16-D1M1V    CL2X16-D1MJ1V  
 CL2Y16-TP1M1V    CL2Y16-TPE1M1V    CL2Y16-TP1MJ1V



#### Features

- ◎The industry's most compact size
- ◎MIL connector used for easy connection to relay terminals, terminal block conversion modules, solenoid valves, and others.
- ◎Simple module replacement by only removing the connector
- ◎Modules with a shared power supply for module and I/O parts are available. (CL2X16-D1MJ1V and CL2Y16-TP1MJ1V) No external power supply for I/O part saves cost and space.

#### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
CL2X16-D1M1V	DC	Positive common	16	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	1-wire type
CL2X16-D1MJ1V	DC	Positive common	16	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	1-wire type

#### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
CL2Y16-TP1M1V	Transistor	Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type
CL2Y16-TP1MJ1V	Transistor	Sink type	16	≤ 0.1 mA	Yes	24 V DC 0.1 A	1-wire type
CL2Y16-TPE1M1V	Transistor	Source type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A	1-wire type

## ► Cable type

### Cable type

**CL1X2-D1D3S   CL1Y2-T1D2S   CL1XY2-DT1D5S**



### Features

- ◎The industry's most compact size
- ◎The remote I/O module can be stored in a duct with cables.
- ◎Integration of communication cables and external device connection cables for easy wiring
- ◎Cables (50 cm) provided to both communication and I/O sides

### Input modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	External connection
CL1X2-D1D3S	DC	Positive common	2	≤ 0.5 ms/≤ 1.5 ms	24 V DC/4 mA	3-wire type

### Output modules

Model	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current	External connection
CL1Y2-T1D2S	Transistor	Sink type	2	≤ 0.1 mA	No	24 V DC 0.1 A	2-wire type

### I/O combined modules

Model	Input format		Number of input points	Input response time	Rated input voltage/current	Output format		Number of output points	Leakage current at OFF	Output protection function	Rated load voltage /current	External connection
	DC	Positive common				Transistor	Sink type					
CL1XY2-DT1D5S	DC	Positive common	1	≤ 1.5 ms	24 V DC/4 mA	Transistor	Sink type	1	≤ 0.1 mA	No	24 V DC 0.1 A	3-wire type/ 2-wire type

## Analog modules

## ► Terminal block type

### Analog input module

**Screw terminal block type   CL2AD4-B**



### Features

- ◎Efficient usage of I/O points (number of occupied stations) is available because the points can be changed by the preset conversion-enabled channel.  
(The number of occupied stations changes depending on the setting of the channel for which conversion is enabled.)
- ◎The dedicated flat cable (50 cm) is directly connected to a module.

### Voltage/current input module

Model	Number of channels	Number of occupied stations
CL2AD4-B	4	16-point mode 4 stations occupied

### Analog output module

**Screw terminal block type   CL2DA2-B**



### Features

- ◎Efficient usage of I/O points (number of occupied stations) is available because the points can be changed by the preset conversion-enabled channel.  
(The number of occupied stations changes depending on the setting of the channel for which conversion is enabled.)
- ◎The dedicated flat cable (50 cm) is directly connected to a module.

### Voltage/current output module

Model	Number of channels	Number of occupied stations
CL2DA2-B	2	16-point mode 2 stations occupied

# Dedicated power supply

## Dedicated power supply

## CL1PSU-2A



### Features

©Power supply dedicated to the CC-Link/LT system with built-in 2A power supply

Item	CL1PSU-2A	
Input	Rated voltage	100/120/200/230/240 V AC
	Allowable voltage range	85...264 V AC
	Rated frequency	50/60 Hz
	Power fuse	3.15 A
	Inrush current	Max. 60 A/200 V AC
Output	Output voltage	24 V DC +10 %/-5 %
	Output current	0.01 A to 2 A derating according to ambient temperature and line voltage [Use so that the current consumption does not exceed 2 A when power is supplied (excluding immediately after power ON).]
	Ripple noise	≤ 500 mVp-p
External connection method	Module power supply: terminal block 3 pins (M3 screws) Power supply for supplying power to communication line/module: CC-Link/LT dedicated connector (4-pin) x 2	
Weight (kg)	0.40	

# Power adapter

## Power adapter

## CL1PAD1



### Features

©Ensuring a stable power supply from the external power source (optional) to the CC-Link/LT system

Item	CL1PAD1
Voltage input range	Depending on connected model. Max. 28.8 V DC
Max. rated current	5.0 A <sup>*5</sup>
Isolation resistance	Across all external terminals and ground terminal 500 V DC, 10 MΩ by insulation resistance tester
External connection method	Module power supply: terminal block 3 pins (M3 screws) Power supply for supplying power to communication line/module: CC-Link/LT dedicated connector (4-pin) x 2
Weight (kg)	0.26

\*5: In regular operation, use the adapter so that the max. rated current is not exceeded.

# Optional parts

## Connector for dedicated flat cable

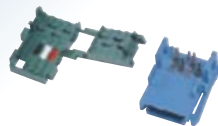
### CL9-CNF-18



Mitsubishi Electric System & Service Co.,Ltd.

## Connector for VCTF cable

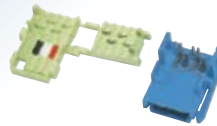
### CL9-CNR-23



Mitsubishi Electric System & Service Co.,Ltd.

## Connector for flexible cable

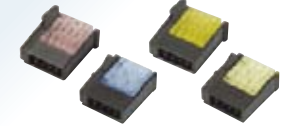
### CL9-CNR-20



Mitsubishi Electric System & Service Co.,Ltd.

## Open sensor connector (e-CON)

### ECN-\*\*\*\*\*



Mitsubishi Electric System & Service Co.,Ltd.

## Joint shield/Dust shield

### ECN-CVR4\*\*\*\*



Mitsubishi Electric System & Service Co.,Ltd.

## Terminating resistor

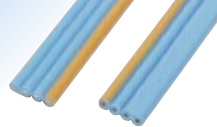
### CL9-TERM



Mitsubishi Electric System & Service Co.,Ltd.

## Dedicated flat cable

### CL9-FL4-18



Mitsubishi Electric System & Service Co.,Ltd.

## Dedicated flexible cable

### CL9-MV4-075



Mitsubishi Electric System & Service Co.,Ltd.

## Tool for spring clamp terminal block

### KD-5339



Mitsubishi Electric System & Service Co.,Ltd.

## IDC tool for communication connector

### L-TOOL-N



Mitsubishi Electric System & Service Co.,Ltd.

## IDC tool for open sensor connector

### e-TOOL-N



Mitsubishi Electric System & Service Co.,Ltd.

## Screw terminal block Common terminal block

### CL2TE-5



Mitsubishi Electric Corporation

## Spring clamp terminal block Common terminal block

### CL2TE-10S



Mitsubishi Electric Corporation

## Holder

### CL1-HLD



Mitsubishi Electric Corporation



# Embedded modules

## Embedded I/O module

**AJ65MBTL1N-16D**  
**AJ65MBTL1N-32T**

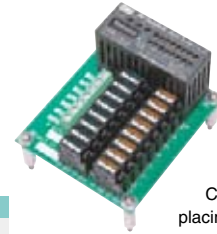
**AJ65MBTL1N-32D**  
**AJ65MBTL1N-16DT**

**AJ65MBTL1N-16T**



### Features

Placing this product to your circuit board allows easy development of remote I/O stations.



Circuit board placing example

### Input modules

Model	Input format	Number of input points	Input response time	Rated input voltage/current
AJ65MBTL1N-16D	DC Positive common	16	≤ 1.5 ms	24 V DC/4 mA
AJ65MBTL1N-32D	DC Positive common	32	≤ 1.5 ms	24 V DC/4 mA

### Output modules

Model	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current
AJ65MBTL1N-16T	Transistor Sink type	16	≤ 0.1 mA	Yes	12/24 V DC 0.1 A
AJ65MBTL1N-32T	Transistor Sink type	32	≤ 0.1 mA	Yes	12/24 V DC 0.1 A

### I/O combined module

Model	Input format	Number of input points	Input response time	Rated input voltage/current	Output format	Number of output points	Leakage current at OFF	Output protection function	Rated load voltage/current
AJ65MBTL1N-16DT	DC Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor Sink type	8	≤ 0.1 mA	Yes	24 V DC 0.1 A

## CC-Link Ver.2 embedded interface board

**Q50BD-CCV2**



### Features

©Sub-circuit board compatible with CC-Link Ver.2. Adding on this to a main circuit board enables development of master, local and intelligent device stations.

Model	Description
Q50BD-CCV2	CC-Link Ver.2 embedded interface board

## Object development

**MFP1N Device kit**



The actual modules may slightly differ in shapes from the photo shown.

### Features

©The MFP1N device kit enables development of master, local and intelligent device stations.

Model	MFP1N	Device kit
Ordering model name	A6GA-CCMFP1NN60F A6GA-CCMFP1NN300F	Q6KT-NPC2OG51
Package unit	60 pcs 300 pcs	40 pcs
Application	Master station-local station-intelligent device station	Network circuit

MFP: Mitsubishi Field-network Processor

## Dedicated communication LSI

**MFP2N MFP2AN MFP3N**



The actual modules may slightly differ in shapes from the photo shown.

### Features

©CC-Link compatible devices can be developed easily without worrying about the communication protocol.

Model	MFP2AN	MFP2N	MFP3N
Ordering model name	A6GA-CCMFP2ANN 60F A6GA-CCMFP2ANN 300F	A6GA-CCMFP2NN 60F A6GA-CCMFP2NN 300F	A6GA-CCMFP3NN 60F A6GA-CCMFP3NN 300F
Package unit	60 pcs 300 pcs	60 pcs 300 pcs	60 pcs 300 pcs
Application	Remote I/O station	Remote I/O station	Remote device station

MFP: Mitsubishi Field-network Processor

## Dedicated communication LSI

**CLC13 CLC21 CLC31**



The actual modules may slightly differ in shapes from the photo shown.

### Features

©CC-Link/LT compatible devices can be developed easily without worrying about the communication protocol.

Model	CLC13	CLC21	CLC31
Ordering model name	CL2GA13-60	CL2GA21-60 CL2GA21-300	CL2GA31-60
Package unit	60 pcs	60 pcs 300 pcs	60 pcs
Application	Master station	Remote I/O station	Remote device station

CLC:CC-Link/LT Controller

\*For the development of CC-Link products that use MFP, "Open Field Network CC-Link Family Compatible Product Development Guidebook (L(NA)-08052E)" is available.

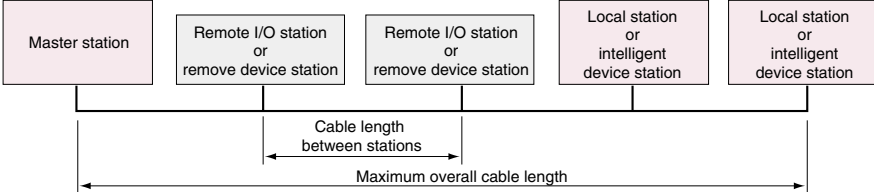
\*For details or lead-free/RoHS compatible products, contact the Open System Center.

E-mail: OSC@rj.MitsubishiElectric.co.jp

**You are requested to become a member of the CC-Link Partner Association (CLPA) to purchase these embedded modules.**



# CC-Link (Ver.1.10) specifications

Item		Specifications														
Control specifications	Maximum number of link points	Remote I/O (RX,RY) :2048 points each Remote register (RWw) :256 words Remote register (RWr) :256 words														
	Number of link points per station	Remote I/O (RX,RY) :32 points each Remote register (RWw) :4 words Remote register (RWr) :4 words														
Communication specifications	Transmission speed	10M/5M/2.5M/625k/156kbps														
	Communication method	Broadcast polling method														
	Synchronization method	Flag synchronous method														
	Encoding method	NRZI method														
	Transmission path	Bus type (conforms to EIA RS-485)														
	Transmission format	Conforms to HDLC														
	Error control system	CRC ( $X^{16} + X^{12} + X^5 + 1$ )														
	Number of connectable modules	64 modules. However, the following conditions must be satisfied. $(1 \times a) + (2 \times b) + (3 \times c) + (4 \times d) \leq 64$ a: Number of modules occupying 1 station, b: Number of modules occupying 2 stations, c: Number of modules occupying 3 stations, d: Number of modules occupying 4 stations $(16 \times A) + (54 \times B) + (88 \times C) \leq 2304$ A: Number of remote I/O stations ----- Max. 64 modules B: Number of remote device stations ----- Max. 42 modules*1 C: Number local stations, standby master stations and intelligent device stations ----- Max. 26 modules														
	Remote station number	1...64														
	Maximum overall cable length and cable length between stations	 <p>Ver.1.10 compatible CC-Link dedicated cable (terminating resistor of 110Ω used)</p> <table border="1"> <thead> <tr> <th>Transmission speed</th> <th>Cable length between stations</th> <th>Maximum overall cable length</th> </tr> </thead> <tbody> <tr> <td>156 kbps</td> <td rowspan="5">≥ 20 cm</td> <td>1200 m</td> </tr> <tr> <td>625 kbps</td> <td>900 m</td> </tr> <tr> <td>2.5 Mbps</td> <td>400 m</td> </tr> <tr> <td>5 Mbps</td> <td>160 m</td> </tr> <tr> <td>10 Mbps</td> <td>100 m</td> </tr> </tbody> </table> <p>When Ver.1.10 modules and Ver.1.00 modules are mixed, the maximum overall cable length and the station-to-station cable length conform to the Ver.1.00 specifications.</p>		Transmission speed	Cable length between stations	Maximum overall cable length	156 kbps	≥ 20 cm	1200 m	625 kbps	900 m	2.5 Mbps	400 m	5 Mbps	160 m	10 Mbps
Transmission speed	Cable length between stations	Maximum overall cable length														
156 kbps	≥ 20 cm	1200 m														
625 kbps		900 m														
2.5 Mbps		400 m														
5 Mbps		160 m														
10 Mbps		100 m														
Connection cable	CC-Link Ver.1.10 compatible cable <ul style="list-style-type: none"> <li>Use the dedicated cable certified by CC-Link Partnership Association.</li> <li>Please note that operation will not be guaranteed if the other cable is used.</li> <li>Cables from different manufacturers can be used together if they support Ver.1.10.</li> <li>For the specifications of the CC-Link dedicated cable or the contact information on them, refer to the partner product catalogs published by CC-Link Partner Association or visit its web site at <a href="http://www.cc-link.org">http://www.cc-link.org</a>.</li> <li>The CC-Link dedicated cables, the high-performance CC-Link dedicated cables and Ver.1.10-compatible CC-Link dedicated cables cannot be used together.</li> </ul>															
Function	Automatic refresh function*2 RAS functions (Standby master function, Automatic return function, Slave station cut-off function, error detection by link special relays/registers, test/monitor)	Remote I/O network mode*2 Scan synchronous function Automatic CC-Link startup*3 Reserved station function Error invalid station setting function Support for duplex function*3														
Remarks	If relay terminal blocks or relay connectors are used for the CC-Link cable installation, the communication error may occur depending on the system. Connect cables directly to each CC-Link module, or consider using the CC-Link repeater modules. For the recommended connection condition of CC-Link cable relay connector, refer to the table below.															
	Transmission speed	156 kbps   625 kbps	10 Mbps, 5 Mbps, and 2.5 Mbps are not applicable													
	Cable length between stations	Cable length between master/local station or intelligent device station and adjacent station	≥ 1 m	For the system configuration of only remote I/O stations and remote device stations.												
		Cable length between remote I/O stations or remote device stations (shortest cable)	≥ 30 cm	For the system configuration consisting of local stations and intelligent device stations.												
	Maximum transmission distance	500 m   100 m	-													
Relay connector spacing	No limitation	-														

\*1: Max. 64 modules when using the MELSEC iQ-R Series (RJ61BT11)'s remote device net Ver.1 mode or the remote device net Ver.2 mode.

\*2: Not available with some connected CPU modules.

\*3: Available with the MELSEC-Q Series.

# Differences between CC-Link Ver.2 and Ver.1

With CC-Link Ver. 2, the cyclic data size can be increased through extended cyclic setting.

## CC-Link Ver.1 specifications

Item		Specifications		
Maximum number of link points		Remote I/O (RX, RY): 2048 points each	Remote register (RWw): 256 points	Remote register (RWr): 256 points
Number of link points per station		Remote I/O (RX, RY): 32 points each	Remote register (RWw): 4 points	Remote register (RWr): 4 points
Number of link points for each number of occupied stations	1 occupied station	Remote I/O (RX, RY): 32 points each	Remote register (RWw): 4 points	Remote register (RWr): 4 points
	2 occupied station	Remote I/O (RX, RY): 64 points each	Remote register (RWw): 8 points	Remote register (RWr): 8 points
	3 occupied station	Remote I/O (RX, RY): 96 points each	Remote register (RWw): 12 points	Remote register (RWr): 12 points
	4 occupied station	Remote I/O (RX, RY): 128 points each	Remote register (RWw): 16 points	Remote register (RWr): 16 points
Number of connectable modules		1) Total number of stations $(1 \times a) + (2 \times b) + (3 \times c) + (4 \times d) \leq 64$ a: Number of 1-station occupying modules, b: Number of 2-station occupying modules, c: Number of 3-station occupying modules, d: Number of 4-station occupying modules 2) Number of connectable modules $(16 \times a) + (54 \times b) + (88 \times c) \leq 2304$ A: Number of remote I/O stations ----- Max. 64 modules B: Number of remote device stations ----- Max. 42 modules* C: Number of local stations, standby master stations and intelligent device stations ----- Max. 26 modules		

\* Max. 64 modules when using the MELSEC IQ-R Series (RJ61BT11)'s remote device net Ver. 1 mode or the remote device net Ver.2 mode.

## CC-Link Ver.2 specifications

Item		Specifications				
Maximum number of link points		Remote I/O (RX, RY): 8192 points each, Remote register (RWw): 2048 points, Remote register (RWr): 2048 points				
Expanded cyclic setting		Single	Double	Quadruple	Octuple	
Number of link points per station		Remote I/O (RX, RY) Remote register (RWw) Remote register (RWr)	32 points each 4 words 4 words	32 points each 8 words 8 words	64 points each 16 words 16 words	128 points each 32 words 32 words
Number of link points for each number of occupied stations	1 occupied station	Remote I/O (RX, RY) Remote register (RWw) Remote register (RWr)	32 points each 4 words 4 words	32 points each 8 words 8 words	64 points each 16 words 16 words	128 points each 32 words 32 words
	2 occupied station	Remote I/O (RX, RY) Remote register (RWw) Remote register (RWr)	64 points each 8 words 8 words	96 points each 16 words 16 words	192 points each 32 words 32 words	384 points each 64 words 64 words
	3 occupied station	Remote I/O (RX, RY) Remote register (RWw) Remote register (RWr)	96 points each 12 words 12 words	160 points each 24 words 24 words	320 points each 48 words 48 words	640 points each 96 words 96 words
	4 occupied station	Remote I/O (RX, RY) Remote register (RWw) Remote register (RWr)	128 points each 16 words 16 words	224 points each 32 words 32 words	448 points each 64 words 64 words	896 points each 128 words 128 words
Number of connected modules		1) Total number of stations $(a + a2 + a4 + a8) + (b + b2 + b4 + b8) \times 2 + (c + c2 + c4 + c8) \times 3 + (d + d2 + d4 + d8) \times 4 \leq 64$ 2) Number of input/output points of all remote stations $(a \times 32 + a2 \times 32 + a4 \times 64 + a8 \times 128) + (b \times 64 + b2 \times 96 + b4 \times 192 + b8 \times 384) + (c \times 96 + c2 \times 160 + c4 \times 320 + c8 \times 640) + (d \times 128 + d2 \times 224 + d4 \times 448 + d8 \times 896) \leq 8192$ 3) Number of all remote register words $(a \times 4 + a2 \times 8 + a4 \times 16 + a8 \times 32) + (b \times 8 + b2 \times 16 + b4 \times 32 + b8 \times 64) + (c \times 12 + c2 \times 24 + c4 \times 48 + c8 \times 96) + (d \times 16 + d2 \times 32 + d4 \times 64 + d8 \times 128) \leq 2048$ a : Number of 1-station occupying modules with single extended cyclic setting b : Number of 2-station occupying modules with single extended cyclic setting c : Number of 3-station occupying modules with single extended cyclic setting d : Number of 4-station occupying modules with single extended cyclic setting a2: Number of 1-station occupying modules with double extended cyclic setting b2: Number of 2-station occupying modules with double extended cyclic setting c2: Number of 3-station occupying modules with double extended cyclic setting d2: Number of 4-station occupying modules with double extended cyclic setting a4: Number of 1-station occupying modules with quadruple extended cyclic setting b4: Number of 2-station occupying modules with quadruple extended cyclic setting c4: Number of 3-station occupying modules with quadruple extended cyclic setting d4: Number of 4-station occupying modules with quadruple extended cyclic setting a8: Number of 1-station occupying modules with octuple extended cyclic setting b8: Number of 2-station occupying modules with octuple extended cyclic setting c8: Number of 3-station occupying modules with octuple extended cyclic setting d8: Number of 4-station occupying modules with octuple extended cyclic setting 4) Number of connectable modules $16 \times A + 54 \times B + 88 \times C \leq 2304$ A: Number of remote I/O stations ----- Max. 64 modules B: Number of remote device stations ----- Max. 42 modules C: Number of local stations, standby master stations and intelligent device stations ----- Max. 26 modules				

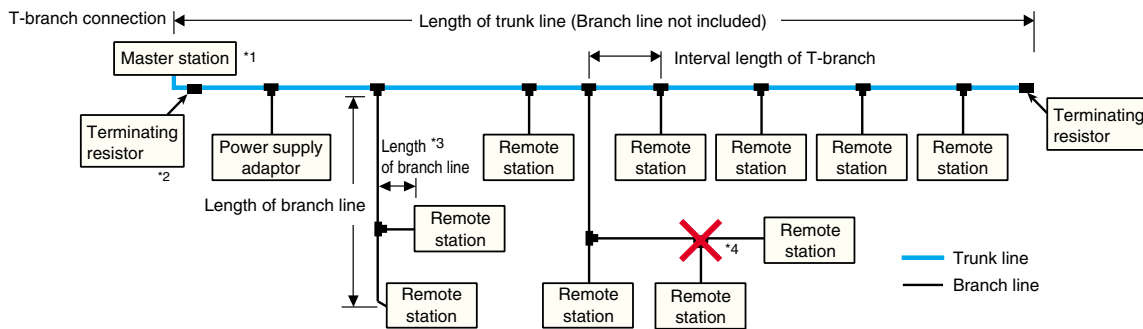
\* 2) and 3) are Ver. 2 mode only; calculation is necessary.

\* There is no change in the cable and wiring specification for CC-Link Ver. 2. Use Ver. 1 cable for the connection of Ver. 2 devices.

# CC-Link/LT specifications

Item		4-point mode	8-point mode	16-point mode	
Control specifications	Maximum number of link points (When the same I/O address is used)	256 points (512 points)	512 points (1024 points)	1024 points (2048 points)	
	Number of link points per station (When the same I/O address is used)	4 points (8 points)	8 points (16 points)	16 points (32 points)	
	Link scan time	When 32 stations connected	Number of points	128 points	256 points
			2.5 Mbps	0.7 ms	0.8 ms
			625 kbps	2.2 ms	2.7 ms
	When 64 stations connected	156 kbps	8.0 ms	10.0 ms	14.1 ms
		Number of points	256 points	512 points	1024 points
2.5 Mbps		1.2 ms	1.5 ms	2.0 ms	
625 kbps	4.3 ms	5.4 ms	7.4 ms		
156 kbps	15.6 ms	20.0 ms	27.8 ms		
Communication specifications	Transmission speed	2.5 Mbps/625 kbps/156 kbps			
	Communication protocol	BITR (Broadcast polling + Interval Timed Response)			
	Transmission path	T-branch type			
	Error control system	CRC			
	Number of connectable modules	64			
	Remote station number	1...64			
	Maximum number of connectable stations per branch line	8			
	Distance between stations	No limit			
	T-branch interval	No limit			
	Master station position	End of trunk line			
	RAS function	Network diagnosis, Internal loopback diagnosis, Station detach function, Automatic return function			
Connection cable	Dedicated flat cable (0.75 mm <sup>2</sup> x 4), VCTF cable, high flexible cable				

# CC-Link/LT network wiring specifications



Item	Specifications			Remarks
Transmission speed	2.5 Mbps	625 kbps	156 kbps	-
Distance between stations	No limit			-
Maximum number of stations on a trunk line	8 modules			-
Length of trunk line	35 m	100 m	500 m	Cable length between 2 terminating resistors (Branch line length not included)
T-branch interval	No limit			-
Maximum length of branch line	4 m	16 m	60 m	Cable length per branch line
Overall length of branch lines	15 m	50 m	200 m	Total length of all trunk lines

\*1 Always install the master module at one end of the trunk line.

\*2 Install a terminating resistor near the master module (within 20 cm).

\*3 The length of a line branched from a branch line is also included in the max. branch line length and overall branch line length.

\*4 Cables cannot be connected between branch lines.

## Precautions when mixed cables are used

1 Different types of cables cannot be used together on the trunk line.

2 Dedicated flat cables, VCTF cables and flexible cables can be used together for branch lines.

\* The wiring specifications do not change according to the used cables and mixed use of cables.

3 Different types of cables cannot be used together on the same branch line.

\* When the module with cable (e.g. CLY2-T1D2S) is used, it can be connected to a different type of cable by making sure the dedicated cables are within 20 cm.

# General specifications

\* The table below lists the general specification of remote I/O modules.  
For the specifications of the master/local modules, please refer to each corresponding manual.

Item	Specifications					
	CC-Link			CC-Link/LT		
Operating ambient temperature	0...55 °C *3			0...55 °C *4		
Storage ambient temperature	-20...75 °C *3			-25...75 °C *4		
Operating ambient humidity	10...90 %RH, non-condensing (The waterproof type remote I/O modules conform to the IP67. *5)			5...95 % RH, non-condensing (conforming to JIS B 3502, IEC 61131-2, level RH-2)		
Storage ambient humidity	10...90 %RH, non-condensing *5			5...95 % RH, non-condensing (conforming to JIS B 3502, IEC 61131-2, level RH-2)		
Vibration resistance	Conforming to JIS B 3502, IEC 61131-2		Frequency	Acceleration	Amplitude	Number of sweeps  10 times each in X, Y and Z directions (for 80 minutes)
		Under	5...8.4 Hz	-	3.5 mm	
		intermittent vibration	8.4...150 Hz	9.8 m/s <sup>2</sup>	-	
		Under	5...8.4 Hz	-	1.75 mm	
		continuous vibration	8.4...150 Hz	4.9 m/s <sup>2</sup>	-	
Shock resistance	Conforming with JIS B 3502, IEC 61131-2 (147 m/s <sup>2</sup> , 3 times in each of 3 directions X, Y and Z)					
Operating ambience	No corrosive gases					
Operating altitude	≤ 2000 m *6					
Installation location	Inside a control panel					
Overvoltage category *1	≤ II					
Pollution degree *2	≤ 2					

\*1: It indicates the device is to be connected to which power distribution part, within the area from the public electricity network to machinery on the premises.  
Category II applies to devices to which power is supplied from fixed installations.  
The surge voltage withstand for devices rated up to 300 V is 2500 V.

\*2: This is an index showing the degree of the conductive pollution that can occur in the environment where the device is used.

In Pollution degree 2, only nonconductive pollution occurs.

Occasionally, however, temporary conductivity caused by condensation can be expected.

\*3: The table below shows the operating ambient temperature and storage ambient temperature for the AJ65FBTA-RPH type waterproof remote I/O modules and Q Series master module.

Item		AJ65FBTA-RPH	Q Series master module
Operating ambient temperature		0...45 °C	0...55 °C
Storage ambient temperature	Not wired (standalone product)	-25...75 °C	-25...75 °C

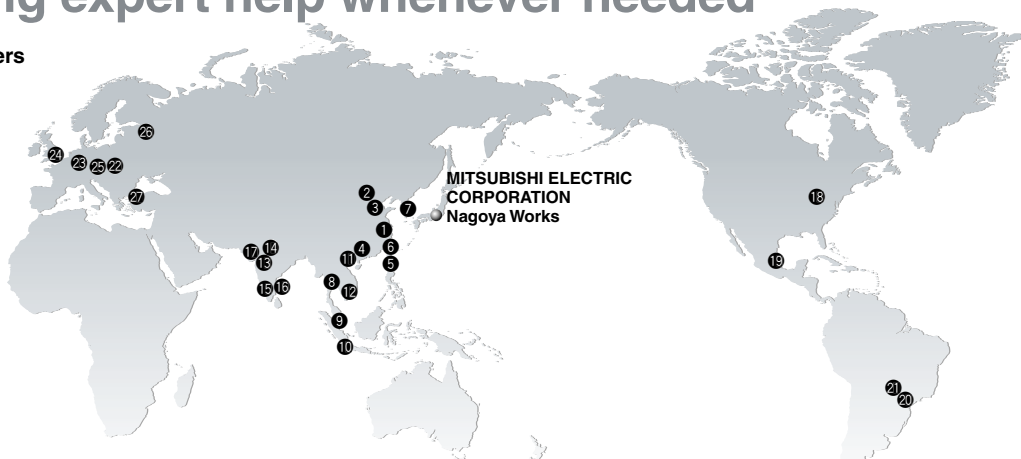
\*4: The ambient operating/storage temperatures satisfy requirements in excess of the JIS B 3502, IEC 61131-2 standards.

\*5: This is applicable to conditions where waterproof connectors are used for all modules or waterproof caps are placed in unused through-pipes.

\*6: Do not operate or store the programmable controller at altitude 0 m or more in a pressurized environment. It may malfunction if it is operated.  
Contact us when operating in a pressurized state.

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**MITSUBISHI ELECTRIC EUROPE B.V. UK Branch**

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Avenir Business Park, Radlicka 751/113e, 158 00 Praha5, Czech Republic  
Tel: +420-251-551-470 / Fax: +420-251-551-471

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**MITSUBISHI ELECTRIC EUROPE B.V. Russian Branch St. Petersburg office**

Piskarevsky pr. 2, bld 2, lit "Sch", BC "Benua", office 720; 195027, St. Petersburg, Russia  
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Serifali Mahallesi Nutuk Sokak No:5, TR-34775 Ümraniye, Istanbul, Turkey  
Tel: +90-216-526-3990 / Fax: +90-216-526-3995



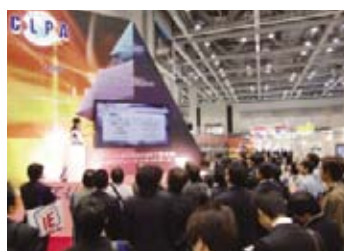
# CC-Link Partner Association (CLPA) - Actively promoting worldwide adoption of CC-Link networks

**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 : <http://www.cc-link.org>

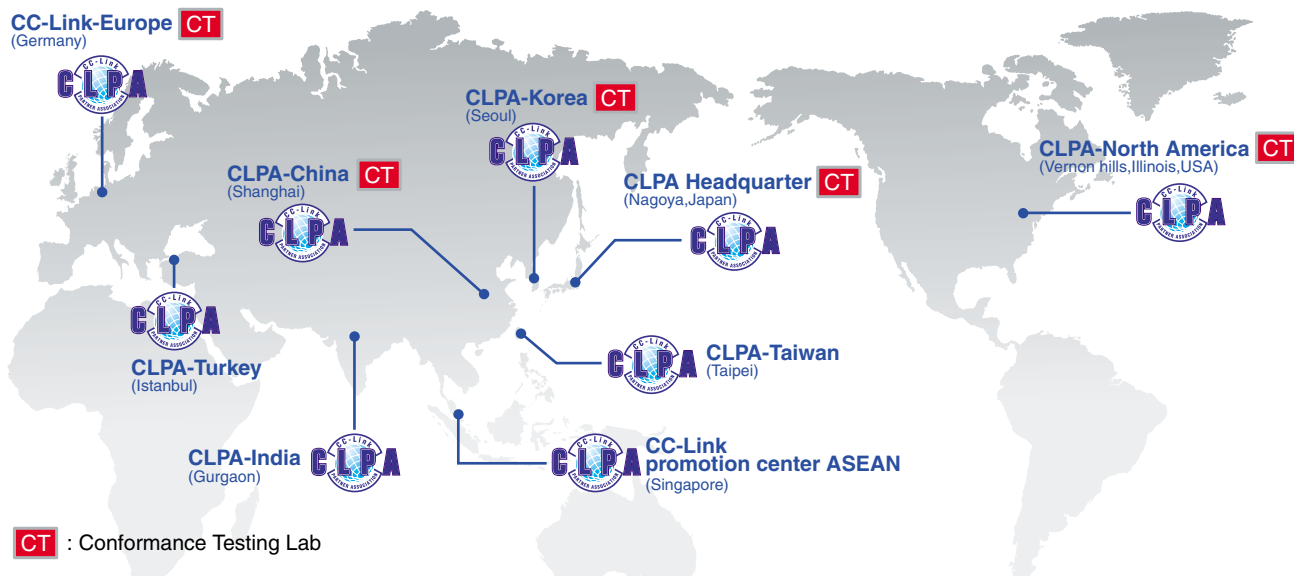
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Nagoya 462-0825 JAPAN  
TEL: +81-52-919-1588 FAX: +81-52-916-8655  
E-mail : [info@cc-link.org](mailto:info@cc-link.org)



CC-Link Partner Association

## 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 the network in that part of the world. For companies looking to increase their presence in Asia, CLPA is well placed to assist these efforts through offices in all major Asian regions.



# CC-Link Related Product Model Names

Mitsubishi Electric Corporation

Type	Model	Specifications	Protection level	CC-Link version*1	
Master/local module	RJ61BT11	Master/local module for MELSEC iQ-R Series	-	2.00	
	QJ61BT11N	Master/local module for MELSEC-Q Series	-	2.00	
	L26CPU-BT	CPU with master/local function for MELSEC-L Series Sink output type	-	2.00	
	L26CPU-PBT	CPU with master/local function for MELSEC-L Series Source output type	-	2.00	
	LJ61BT11	Master/local module for MELSEC-L Series	-	2.00	
Bridge module	FX3U-16CCL-M	Master block for MELSEC-FX Series (FX3G/FX3U/FX3GC/FX3UC)	-	2.00	
	NZ2GF-CCB	CC-Link IE Field Network-CC-Link bridge module	-	1.10	
	NZ2AW1C1BY	CC-Link-AnyWire Bitty bridge module	-	1.10	
Remote I/O module	NZ2AW1C2D2	CC-Link-AnyWire DB A20 bridge module	-	2.00	
	NZ2AW1C2AL	CC-Link-AnyWireASLINK bridge module	-	2.00	
	Screw terminal block type	AJ65SBB2N-8A	Input 8 points: 100...120 V AC 2-wire type Response time 20 ms	IP1X	1.10
		AJ65SBB2N-16A	Input 16 points: 100...120 V AC 2-wire type Response time 20 ms	IP1X	1.10
		AJ65SBB1-8D	Input 8 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB3-8D	Input 8 points: 24 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB1-16D	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB1-16D1	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms	IP2X	1.10
		AJ65SBB3-16D	Input 16 points: 24 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB3-16D5	Input 16 points: 5 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB3-16KD	Input 16 points: 24 V DC (positive/negative common shared) 3-wire type Response time 0.2/1.5/5/10 ms switching type	IP2X	1.10
		AJ65SBB1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB1-32D1	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms	IP2X	1.10
		AJ65SBB1-32D5	Input 32 points: 5 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBB1-32KD	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2/1.5/5/10 ms switching type	IP2X	1.10
		AJ65SBB1-8T	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-8T1	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB2-8T	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
		AJ65SBB2-8T1	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-16T1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB2-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
		AJ65SBB2-16T1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32T	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-32T1	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-8TE	Output 8 points: 12/24 V DC (0.1 A) Transistor output (source type) 1-wire type	IP2X	1.10
		AJ65SBB1-16TE	Output 16 points: 12/24 V DC (0.1 A) Transistor output (source type) 1-wire type	IP2X	1.10
		AJ65SBB1B-16TE1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (source type) 1-wire type	IP2X	1.10
		AJ65SBB1-32TE1	Output 32 points: 12/24 V DC (0.5 A) Transistor output (source type) 1-wire type	IP2X	1.10
		AJ65SBB2N-8R	Output 8 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65SBB2N-16R	Output 16 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65SBB2N-8S	Output 8 points: 100...240 V AC (0.6 A) Triac output 2-wire type	IP1X	1.10
		AJ65SBB2N-16S	Output 16 points: 100...240 V AC (0.6 A) Triac output 2-wire type	IP1X	1.10
		AJ65SBB3-8DT	Input 4 points: 24 V DC (positive common) 3-wire type Response time 1.5 ms Output 4 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
		AJ65SBB3-8DT2	Input 4 points: 24 V DC (positive common) 3-wire type Response time 1.5 ms Output 4 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-16DT	Input 8 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-16DT1	Input 8 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-16DT2	Input 8 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-16DT3	Input 8 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB3-16DT	Input 8 points: 24 V DC (positive common) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
		AJ65SBB3-16DT2	Input 8 points: 24 V DC (positive common) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB3-16KDT2	Input 8 points: 24 V DC (positive common) 3-wire type Response time 0.2/1.5/5/10 ms switching type Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB3-16KDT8	Input 8 points: 24 V DC (positive common) 3-wire type Response time 0.2/1.5/5/10 ms switching type Output 8 points: 12 V DC (0.5 A) Transistor output (sink type) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32DT	Input 16 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-32DT1	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 16 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65SBB1-32DT2	Input 16 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32DT3	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 16 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32KDT2	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2/1.5/5/10 ms switching type Output 16 points: 24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32KDT8	Input 16 points: 12 V DC (positive common) 1-wire type Response time 0.2/1.5/5/10 ms switching type Output 16 points: 12 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBB1-32DTE1	Input 16 points: 24 V DC (negative common) 1-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.5 A) Transistor output (source type) 1-wire type	IP2X	1.10
		AJ65SBB3-16DR	Input 8 points: 24 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65SBB3-16KDR	Input 8 points: 24 V DC (positive/negative common shared) 3-wire type Response time 0.2/1.5/5/10 ms switching type Output 8 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10

\*1: This is the CC-Link version supported by each module. For the CC-Link version supported by the system and its combinations, etc., please refer to the manual of the master station.

Type	Model	Specifications	Protection level	CC-Link version*1	
Remote I/O module	Screw/2-piece terminal block type	AJ65BTB1-16D	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 10 ms	IP2X	1.10
		AJ65BTB2-16D	Input 16 points: 24 V DC (positive/negative common shared) 2-wire type Response time 10 ms	IP2X	1.10
		AJ65BTB1-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65BTB2-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
		AJ65BTB2-16R	Output 16 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65BTB1-16DT	Input 8 points: 24 V DC (positive common) Response time 10 ms Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65BTB2-16DT	Input 8 points: 24 V DC (positive common) Response time 10 ms Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP2X	1.10
	A2C form terminal block type	AJ65DBTB1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 10 ms	IP2X	1.10
		AJ65DBTB1-32T1	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65DBTB1-32R	Output 32 points: 24 V DC/240 V AC (2 A) Relay output 1-wire type	IP1X	1.10
		AJ65DBTB1-32DT1	Input 16 points: 24 V DC (positive common) Response time 10 ms Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 1-wire type	IP2X	1.10
		AJ65DBTB1-32DR	Input 16 points: 24 V DC (positive/negative common shared) Response time 10 ms Output 16 points: 24 V DC/240 V AC (2 A) Relay output 1-wire type	IP1X	1.10
	Spring clamp terminal block push-in type	AJ65ABTP3-16D	Input 16 points: 24 V DC/6 mA (positive common) 3-wire type Response time 1.5 ms, with Diagnostic Functions *2	IP1XB	1.10
		AJ65ABTP3-16DE	Input 16 points: 24 V DC/6 mA (negative common) 3-wire type Response time 1.5 ms, with Diagnostic Functions *2	IP1XB	1.10
	Spring clamp terminal block type	AJ65VBTS3-16D	Input 16 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTS3-32D	Input 32 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTS2-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
		AJ65VBTS2-32T	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
		AJ65VBTS32-16DT	Input 8 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
		AJ65VBTS32-32DT	Input 16 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
	Sensor connector type	AJ65VBTCE3-8D	Input 8 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTCE3-16D	Input 16 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTCE3-32D	Input 32 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTCE3-16DE	Input 16 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTCE3-32DE	Input 32 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms	IP1XB	1.10
		AJ65VBTCE2-8T	Output 8 points: 12/24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
		AJ65VBTCE2-16T	Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10
		AJ65VBTCE3-16TE	Output 16 points: 12/24 V DC (0.1 A) Transistor output (source type) 3-wire type	IP1XB	1.10
AJ65VBTCE32-16DT		Input 8 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10	
AJ65VBTCE3-16DTE		Input 8 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.1 A) Transistor output (source type) 3-wire type	IP1XB	1.10	
AJ65VBTCE32-32DT		Input 16 points: 24 V DC/5 mA (positive common) 3-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10	
AJ65VBTCE3-32DTE		Input 16 points: 24 V DC/5 mA (negative common) 3-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.1 A) Transistor output (source type) 3-wire type	IP1XB	1.10	
One-touch connector type	AJ65VBTCU3-8D1	Input 8 points: 24 V DC (positive common) 3-wire type Response time 0.2 ms	IP1XB	1.10	
	AJ65VBTCU3-16D1	Input 16 points: 24 V DC (positive common) 3-wire type Response time 0.2 ms	IP1XB	1.10	
	AJ65SBTC4-16DN	Input 16 points: 24 V DC (positive common) 4-wire type Response time 1.5 ms	IP2X	1.10	
	AJ65SBTC4-16DE	Input 16 points: 24 V DC (negative common) 4-wire type Response time 1.5 ms	IP2X	1.10	
	AJ65SBTC1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10	
	AJ65SBTC1-32D1	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms	IP2X	1.10	
	AJ65VBTCU2-8T	Output 8 points: 12/24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10	
	AJ65VBTCU2-16T	Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink type) 2-wire type	IP1XB	1.10	
	AJ65SBTC1-32T	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65SBTC1-32T1	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10	
	AJ65SBTC4-16DT	Input 8 points: 24 V DC (positive common) 4-wire type (for 8 sensors) Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 4-wire type	IP2X	1.10	
	AJ65SBTC4-16DT2	Input 8 points: 24 V DC (positive common) 4-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output (sink type) 4-wire type Low-leakage current type	IP2X	1.10	
	AJ65SBTC1-32DT	Input 16 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65SBTC1-32DT1	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65SBTC1-32DT2	Input 16 points: 24 V DC (positive common) 1-wire type Response time 1.5 ms Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10	
	AJ65SBTC1-32DT3	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 1-wire type Low-leakage current type	IP2X	1.10	
40-pin connector type (FCN connector type)	AJ65SBTCF1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10	
	AJ65BTC1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 10 ms	IP2X	1.10	
	AJ65SBTCF1-32T	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65BTC1-32T	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65SBTCF1-32DT	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP2X	1.10	
	AJ65VBTCF1-32DT1	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP1XB	1.10	
	AJ65VBTCF1-32DT1	Input 16 points: 24 V DC (positive common) 1-wire type Response time 0.2 ms Shared power supply for module and I/O parts Output 16 points: 24 V DC (0.1 A) Transistor output (sink type) 1-wire type	IP1XB	1.10	

\* Positive common: sink type, negative common: source type

\*1: This is the CC-Link version supported by each module. For the CC-Link version supported by the system and its combinations, etc., please refer to the manual of the master station.

\*2: These modules are used as remote device stations.



# CC-Link Related Product Model Names

## Mitsubishi Electric Corporation

Type		Model	Specifications	Protection level	CC-Link version <sup>1</sup>	
Remote I/O module	Waterproof connector type	AJ65FBTA4-16D	Input 16 points: 24 V DC (positive common) 4-wire type Response time 1.5 ms	IP67	1.10	
		AJ65FBTA4-16DE	Input 16 points: 24 V DC (negative common) 4-wire type Response time 1.5 ms	IP67	1.10	
		AJ65FBTA2-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink type) 2-wire type	IP67	1.10	
		AJ65FBTA2-16TE	Output 16 points: 12/24 V DC (1.0 A) Transistor output (source type) 2-wire type	IP67	1.10	
		AJ65FBTA42-16DT	Input 8 points: 24 V DC (positive common) 4-wire type Response time 1.5 ms Output 8 points: 24 V DC (0.5 A) Transistor output sink type 2-wire type	IP67	1.10	
		AJ65FBTA42-16DTE	Input 8 points: 24 V DC (negative common) 4-wire type Response time 1.5 ms Output 8 points: 24 V DC (1.0 A) Transistor output (source type) 2-wire type	IP67	1.10	
Safety relay module	Spring clamp terminal block type	QS90SR2SP-CC	For CC-Link Safety input: 1 point (2 inputs) P type (positive common/positive common input) Safety output: 1 point (3 outputs)	IP1X	1.10	
		QS90SR2SN-CC	For CC-Link Safety input: 1 point (2 inputs) N type (positive common/negative common input) Safety output: 1 point (3 outputs)	IP1X	1.10	
Analog module	Screw terminal block type	Voltage/current input	AJ65SBT2B-64AD	4-channel voltage input: -10...10 V DC/-4000...4000 current input: 0...20 mA DC/0...4000	IP2X	1.10
			AJ65BT-64AD	4-channel voltage input: -10...10 V DC/-2000...2000 current input: 0...20 mA DC/0...4000	IP2X	1.10
			AJ65SBT2B-64TD	4-channel Thermocouple (B, R, S, K, E, J, T, N) input	IP2X	1.10
		Temperature input	AJ65BT-68TD	8-channel Thermocouple (B, R, S, K, E, J, T) input	IP2X	1.10
			AJ65SBT2B-64RD3	4-channel 3-wire type RTD (Pt100, JPt100, Ni100) input	IP2X	1.10
			AJ65BT-64RD3	4-channel 3-wire type Platinum RTD (Pt100, JPt100) input	IP2X	1.10
	Voltage/current output	AJ65BT-64RD4	4-channel 4-wire type Platinum RTD (Pt100, JPt100) input	IP2X	1.10	
		AJ65SBT-62DA	2-channel voltage output: -4000...4000/-10...10 V DC current output: 0...4000/0...20 mA DC	IP2X	1.10	
	Voltage output	AJ65SBT2B-64DA	4-channel voltage output: -16000...16000/-10...10 V DC current output: 0...12000/0...20 mA DC	IP2X	1.10	
		AJ65BT-64DAV	4-channel voltage output: -2000...2000/-10...10 V DC	IP2X	1.10	
	Current output	AJ65BT-64DAI	4-channel current output: 0...4000/4...20 mA DC	IP2X	1.10	
		One-touch connector type	Voltage input	AJ65VBTCTU-68ADVN	8-channel voltage input: -10...10 V DC/-4000...4000	IP1XB
	Current input		AJ65VBTCTU-68ADIN	8-channel current input: 0...20 mA DC/0...4000	IP1XB	2.00
	Voltage output		AJ65VBTCTU-68DAVN	8-channel voltage output: -4000...4000/-10...10 V DC	IP1XB	2.00
High-speed counter module		AJ65BT-D62	2-channel count input: 5/12/24 V DC, preset input: 5/12/24 V DC	IP2X	1.10	
		AJ65BT-D62D	2-channel count input: differential type line driver, preset input: 5/12/24 V DC	IP2X	1.10	
		AJ65BT-D62D-S1	2-channel count input: differential type line driver, preset input: differential type line driver	IP2X	1.10	
Positioning module		AJ65BT-D75P2-S3	2 axes (independent, with/ linear and circular interpolation) Output: differential driver/open collector	IP2X	1.10	
RS-232 interface module		AJ65BT-R2N	RS-232 1-channel, with/ DC input 2 points Transistor output 2 points	IP2X	1.10	
FX Series interface block		FX3U-64CCL	Interface block for FX3G, FX3U, FX3GC, FX3UC Series	-	2.00	
		FX2N-32CCL	Interface block for FX3G, FX3U, FX3GC, FX3UC Series	-	1.00	
WS Series interface module		WS0-GCC100202	Interface module for Safety controller	-	1.10	
Network interface board		Q80BD-J61BT11N	For PCI bus slot: master station, standby master station or local station	-	2.00	
		Q81BD-J61BT11	For PCI Express® bus slot: master station, standby master station or local station	-	2.00	
Repeater module	Repeater hub module	AJ65FBTA-RPH	8-port star wiring hub module with repeater function, low profile waterproof type	IP67	1.10	
	Repeater module (T-branch)	AJ65BTS-RPH	8-port star wiring hub module with repeater function, spring clamp terminal block type	IP2X	1.10	
		AJ65SBT-RPT	T-branch module with repeater function	IP2X	1.10	
	Optical repeater module	AJ65SBT-RPS	For SI/QSI type fiber cable (Use 2 modules as a set)	IP2X	1.10	
		AJ65SBT-RPG	For GI type fiber cable (Use 2 modules as a set)	IP2X	1.10	
Space optical repeater module	AJ65BT-RPI-10A	AJ65BT-RPI-10A and AJ65BT-RPI-10B used as a pair, 156 k/625 k/2.5 Mbps supported	IP2X	1.10		
	AJ65BT-RPI-10B		IP2X	1.10		
Embedded type I/O module		AJ65MBTL1N-16D	Input 16 points: 24 V DC (positive common) Pin header type 44-pin (2 rows) Response time 1.5 ms	-	1.10	
		AJ65MBTL1N-16T	Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink type) Pin header type 44-pin (2 rows)	-	1.10	
		AJ65MBTL1N-16DT	Input 8 points: 24 V DC (positive common) Response time 1.5 ms Output 8 points: 24 V DC (0.1 A) Transistor output (sink type) Pin header type 44-pin (2 rows)	-	1.10	
		AJ65MBTL1N-32D	Input 32 points: 24 V DC (positive common) Pin head type 62-pin (2 rows) Response time 1.5 ms	-	1.10	
		AJ65MBTL1N-32T	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink type) Pin head type 62-pin (2 rows)	-	1.10	
Embedded type interface board		Q50BD-CCV2	Master/local/intelligent device station	-	2.00	
Object development	MFP1N	A6GA-CCMFP1NN60F	Communication LSI for lead-free/RoHS compatible master/local/intelligent device station (60 pcs)	-	+2	
		A6GA-CCMFP1NN300F	Communication LSI for lead-free/RoHS compatible master/local/intelligent device station (300 pcs)	-	+2	
	Device kit	Q6KT-NPC2OG51	For network circuit (Flash ROM x 1pc, SPLD x 2 pcs)	-	+2	
Dedicated communication LSI	MFP2AN	A6GA-CCMFP2ANN 60F	Communication LSI for lead-free/RoHS compatible remote I/O station (16 points) (60 pcs)	-	+3	
		A6GA-CCMFP2ANN 300F	Communication LSI for lead-free/RoHS compatible remote I/O station (16 points) (300 pcs)	-	+3	
	MFP2N	A6GA-CCMFP2NN 60F	Communication LSI for lead-free/RoHS compatible remote I/O station (32 points) (60 pcs)	-	+3	
		A6GA-CCMFP2NN 300F	Communication LSI for lead-free/RoHS compatible remote I/O station (32 points) (300 pcs)	-	+3	
	MFP3N	A6GA-CCMFP3NN 60F	Communication LSI for lead-free/RoHS compatible remote device station (60 pcs)	-	+2	
		A6GA-CCMFP3NN 300F	Communication LSI for lead-free/RoHS compatible remote device station (300 pcs)	-	+2	

\* Positive common: sink type, negative common: source type

<sup>1</sup>: This is the CC-Link version supported by each module. For the CC-Link version supported by the system and its combinations, etc., please refer to the manual of the master station.

<sup>2</sup>: Can be used in the development of products supporting the CC-Link versions 1.10 and 2.00.

<sup>3</sup>: Can be used in the development of products supporting the CC-Link version 1.10.

## Mitsubishi Electric Engineering Corporation

Type	Model	Specifications	Protection level	CC-Link version <sup>1</sup>
CompactPCI compatible interface board	ECP-CL2BD	CC-Link interface board for FA computer (CompactPCI bus slot 3U size: master station, standby master station or local station)	-	2.00

## Optional parts for I/O modules

### ■ One-touch connector plugs

Type	Model	Specifications			
		Cover color	Core wire size of applicable cable	Core wire size of applicable cable	Maximum rated current
One-touch connector plug (20 pcs)	A6CON-P214 (33104-6000FL*1)	Transparent	0.14...0.2 mm <sup>2</sup> (26...24 AWG)	φ1.0...1.4 mm	2 A*2
	A6CON-P220 (33104-6100FL*1)	Yellow		φ1.4...2.0 mm	
	A6CON-P514 (33104-6200FL*1)	Red	0.3...0.5 mm <sup>2</sup> (22...20 AWG)	φ1.0...1.4 mm	3 A*2
	A6CON-P520 (33104-6300FL*1)	Blue		φ1.4...2.0 mm	
One-touch connector plug for communication (10 pcs)	A6CON-L5P (35505-6000-B0M GF*1)	Communication line: 0.5 mm <sup>2</sup> , 20 AWG, Shielded cable: 0.5 mm <sup>2</sup> , 20 AWG Applicable cable size (diameter): φ2.2...3.0 mm			
One-touch connector plug for power supply and FG (10 pcs)	A6CON-PW5P (35505-6080-A00 GF*1)	Core wire size of applicable cable: 0.75 mm <sup>2</sup> (0.66...0.98 mm <sup>2</sup> ), 18 AWG, 0.16 mm or larger for strand diameter, Insulating coating material PVC (heat resistant vinyl), Outer diameter of applicable cable: φ2.2...3.0mm, Maximum rated current: 7 A*2			
	A6CON-PW5P-SOD (35505-6180-A00 GF*1)	Core wire size of applicable cable: 0.75 mm <sup>2</sup> (0.66...0.98 mm <sup>2</sup> ), 18 AWG, 0.16 mm or larger for strand diameter, Insulating coating material PVC (heat resistant vinyl), Outer diameter of applicable cable: φ2.0...2.3 mm, Maximum rated current: 7 A*2			
One-touch connector plug with terminating resistor (1 pc)*3	A6CON-TR11N	One-touch connector plug for communication with terminating resistor (110 Ω) (built-in type)			

\*1: Part model name (manufactured by 3M)

\*2: Keep the current within the allowable of the connected cable.

\*3: When the connector type remote I/O is used for the end station, be sure to use this.

### ■ Online connector

Type	Model	Specifications
Online connector for communication (5 pcs)	A6CON-LJ5P (35720-L200-B00 AK*1)	Online connector for communication, 5-pole (10-pin)
Online connector for power supply and FG (5 pcs)	A6CON-PWJ5P (35720-L200-A00 AK*1)	Online connector for power supply, FG 5-pole (10-pin)

\*1: Part model name (manufactured by 3M)

### ■ Protective cover for remote I/O module

Type	Model	Applicable module
Protective cover for 8-point module (10 pcs)	A6CVR-8	AJ65SBTB1-8D, AJ65SBTB1-8T, AJ65SBTB1-8TE, AJ65SBT-RPT, AJ65SBTB1-8T1
	A6CVR-VCE8	AJ65VBTC3-8D, AJ65VBTC2-8T
Protective cover for 16-point module (10 pcs)	A6CVR-16	AJ65SBTB1-16D, AJ65SBTB1-16D1, AJ65SBTC1-32D, AJ65SBTC1-32D1, AJ65SBTB3-8D, AJ65SBTB2-8A, AJ65SBTB2N-8A, AJ65SBTB1-16T, AJ65SBTB1-16T1, AJ65SBTC1-32T, AJ65SBTB2-8T, AJ65SBTB1-16TE, AJ65SBTB2-8R, AJ65SBTB2N-8R, AJ65SBTB2-8S, AJ65SBTB2N-8S, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, AJ65SBTC4-16D, AJ65SBTC4-16DT, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB32-8DT, AJ65SBT-RPG, AJ65SBT-RPS, AJ65SBTC4-16DN, AJ65SBTC4-16DE, AJ65SBTB2-8T1, AJ65SBTB1-16DT2, AJ65SBTC1-32DT2, AJ65SBTC1-32DT3, AJ65SBTC4-16DT2, AJ65SBTB1-16DT3, AJ65SBTB32-8DT2
		A6CVR-VCE16
Protective cover for 32-point module (10 pcs)	A6CVR-32	AJ65SBTB1-32D, AJ65SBTB1-32D1, AJ65SBTB3-16D, AJ65SBTB2-16A, AJ65SBTB2N-16A, AJ65SBTB1-32T, AJ65SBTB1-32T1, AJ65SBTB2-16T, AJ65SBTB2N-16R, AJ65SBTB2-16S, AJ65SBTB2N-16S, AJ65SBTB1-32DT, AJ65SBTB1-32DT1, AJ65SBTB32-16DT, AJ65SBTB2N-16R, AJ65SBTB2-16T1, AJ65SBTB1-32DT3, AJ65SBTB32-16DT2, AJ65SBTB1-32DT2

### ■ Protective cap for unused connector

Type	Model	Specifications
Waterproof cap (20 pcs)	A6CAP-WP2	For protective cover for unused connector, waterproof protective structure: IP67-compatible, applicable for AJ65FBTA□□ I/O module

### ■ 40-pin connector (FCN connector)

Type	Model	Specifications
40-pin connector (FCN connector) (1 pc)	A6CON1	Solder type (straight-out type)
	A6CON2	Crimp type (straight-out type)
	A6CON3	IDC type (flat cable type)
	A6CON4	Solder type (straight-out/diagonal-out type)

## CC-Link Safety Related Product Model Names

### Mitsubishi Electric Corporation

Type	Model	Specifications	Protection level	
Master module	QS0J61BT12	Maximum number of stations: 64 stations (maximum of 42 safety stations) Safety station information management	IP2X	
Remote I/O module	Screw/2-piece terminal block type	QS0J65BTB2-12DT	Safety input: 8 points (dual input), 16 points (single input) Safety output: 4 points (source + sink type), 2 points (source + source type)	IP2X
		QS0J65BTS2-8D	Safety input: 8 points (dual input), 16 points (single input)	IP2X
	Spring clamp terminal block type	QS0J65BTS2-4T	Safety output: 4 points (source + sink type), 2 points (source + source type)	IP2X



## CC-Link/LT Related Product Model Names

### Mitsubishi Electric Corporation

Type		Model	Specifications	Protection level		
Master module		QJ61CL12	CC-Link/LT master module for MELSEC-Q Series	-		
		LJ61CL12	CC-Link/LT master module for MELSEC-L Series	-		
		FX2N-64CL-M	CC-Link/LT master module for MELSEC-FX3N and FX3NUC	-		
Bridge module		FX3uc-32MT-LT (-2)*1	MELSEC-FX3uc series CC-Link/LT programmable controller (built-in master function)	-		
		AJ65SBT-CLB	CC-Link - CC-Link/LT bridge module	IP2X		
Remote I/O module	Screw terminal block type	CL1X4-D1B2	Input 4 points: 24 V DC (positive/negative common shared)	IP2X		
		CL2X8-D1B2	Input 8 points: 24 V DC (positive/negative common shared)	IP2X		
		CL1Y4-T1B2	Output 4 points: 12/24 V DC (sink type) 0.1 A Transistor output	IP2X		
		CL2Y8-TP1B2	Output 8 points: 12/24 V DC (sink type) 0.1 A Transistor module (with output protection function)	IP2X		
		CL1Y4-R1B2	Output 4 points: 30 V DC, ≤ 250 V AC 2 A Relay output	IP1X		
		CL1Y4-R1B1	Output 4 points: 30 V DC, ≤ 250 V AC 2 A Relay output 1 point 1 common (independent)	IP1X		
		CL1XY4-DT1B2	Input 2 points: 24 V DC (positive/negative common shared) Output 2 points: 12/24 V DC (sink type) 0.1 A Transistor output	IP2X		
		CL1XY8-DT1B2	Input 4 points: 24 V DC (positive/negative common shared) Output 4 points: 12/24 V DC (sink type) 0.1 A Transistor output	IP2X		
		CL1XY4-DR1B2	Input 2 points: 24 V DC (positive/negative common shared) Output 2 points: 30 V DC, ≤ 250 V AC (sink type) 2 A Relay output	IP1X		
		CL1XY8-DR1B2	Input 4 points: 24 V DC (positive/negative common shared) Output 4 points: 30 V DC, ≤ 250 V AC 2 A Relay output	IP1X		
		Spring clamp terminal block type	CL1X4-D1S2	Input 4 points: 24 V DC (positive/negative common shared)	IP2X	
			CL2X8-D1S2	Input 8 points: 24 V DC (positive/negative common shared)	IP2X	
	CL1Y4-T1S2		Output 4 points: 12/24 V DC (sink type) 0.1 A Transistor output	IP2X		
	CL2Y8-TP1S2		Output 8 points: 12/24 V DC (sink type) 0.1 A Transistor output (output protection function)	IP2X		
	CL2Y8-TPE1S2		Output 8 points: 12/24 V DC (source type) 0.1 A Transistor output (output protection function)	IP2X		
	Sensor connector type (e-CON)		CL1X4-D1C3	Input 4 points: 24 V DC (positive common)	IP2X	
		CL2X8-D1C3V	Input 8 points: 24 V DC (positive common)	IP2X		
		CL2X16-D1C3V	Input 16 points: 24 V DC (positive common)	IP2X		
		CL1Y4-T1C2	Output 4 points: 24 V DC (sink type) 0.1 A Transistor output	IP2X		
		CL2Y8-TP1C2V	Output 8 points: 24 V DC (sink type) 0.1 A Transistor module (output protection function)	IP2X		
		CL2Y16-TP1C2V	Output 16 points: 24 V DC (sink type) 0.1 A Transistor module (output protection function)	IP2X		
		CL2XY16-DTP1C5V	Input 8 points: 24 V DC (positive common) Output 8 points: 24 V DC (sink type) 0.1 A Transistor module (output protection function)	IP2X		
		MIL connector type	CL2X16-D1M1V	Input 16 points: 24 V DC (positive common)	IP2X	
	CL2X16-D1MJ1V		Input 16 points: 24 V DC (positive common) Shared power supply for module and I/O parts	IP2X		
	CL2Y16-TP1M1V		Output 16 points: 12/24 V DC (sink type) 0.1 A Transistor module (output protection function)	IP2X		
	CL2Y16-TP1MJ1V		Output 16 points: 24 V DC (sink type) 0.1 A Transistor module (output protection function) Shared power supply for module and I/O parts	IP2X		
	CL2Y16-TPE1M1V		Output 16 points: 12/24 V DC (source type) 0.1 A Transistor module (output protection function)	IP2X		
	Cable type	CL1X2-D1D3S	Input 2 points: 24 V DC (positive common)	IP2X		
		CL1Y2-T1D2S	Output 2 points: 24 V DC (sink type) 0.1 A Transistor output	IP2X		
		CL1XY2-DT1D5S	Input 1 points: 24 V DC (positive common) Output 1 points: 24 V DC (sink type) 0.1 A Transistor output	IP2X		
	Analog module	Screw terminal block type	Voltage/current input	CL2AD4-B	4-channel voltage input: -10...10 V DC/-4000...4000 current input: 0...20 mA DC/0...4000	IP2X
			Voltage/current output	CL2DA2-B	2-channel voltage output: -4000...4000/-10...10 V DC current output: 0...4000/0...20 mA DC	IP2X
	Dedicated power supply		CL1PSU-2A	CC-Link/LT dedicated power supply (2 A)	IP1X	
	Power adapter		CL1PAD1	Power adapter (5 A) for CL1PAD1 CC-Link/LT	-	
	Communication LSI for master station	CLC13	CL2GA13-60	Communication LSI for lead-free/RoHS compatible master station (60 pcs)	-	
	Communication LSI for remote I/O station	CLC21	CL2GA21-60	Communication LSI for lead-free/RoHS compatible remote I/O station (60 pcs)	-	
CL2GA21-300			Communication LSI for lead-free/RoHS compatible remote I/O station (300 pcs)	-		
Communication LSI for remote device station	CLC31	CL2GA31-60	Communication LSI for remote device station (60 pcs)	-		
Accessories	Common terminal block	CL2TE-5	Common terminal block for screw terminal block type modules (applicable model: CL2X8-D1B2, CL2Y8-TP1B2, CL2AD4-B)	-		
		CL2TE-10S	Common terminal block for spring clamp terminal block type modules (applicable model : CL2X8-D1S2)	-		
	Holder	CL1-HLD	Holder for cable type installation (5 pcs)	-		

\*1 CC-Link/LT parameters for FX3uc-32MT-LT-2 can be configured with GX Works2, GX Developer or display modules.

### Mitsubishi Electric System & Service Co.,Ltd.

Type		Model	Specifications	Protection level
Accessories	Connector	CL9-CNF-18	Connector for CC-Link/LT dedicated flat cable	-
		CL9-CNR-23	Connector for CC-Link/LT dedicated VCTF cable	-
		CL9-CNR-20	Connector for CC-Link/LT dedicated flexible cable	-
	Cable	CL9-FL4-18	CC-Link/LT dedicated flat cable	-
		CL9-MV4-075	CC-Link/LT dedicated flexible cable	-
	Terminating resistor	CL9-TERM	Terminating resistor for dedicated flat, VCTF, and flexible cables	-
	Open sensor connector (e-CON)	ECN-*****	I/O connector for sensor connector type modules *: The model name differs according to the color and wire diameter.	-
	Joint shield/Dust shield	ECN-CVR4****	Protection shields for relay part of open sensor connectors, sensor connectors, and empty slots of remote I/O module	-
	Tool	L-TOOL-N	IDC tool for connector	-
		e-TOOL-N	IDC tool for open sensor connector	-
	KD-5339	Tool for spring clamp terminal block	-	

## FA Products

PLC

MELSEC iQ-R Series

Revolutionary, next generation controllers building a new era in automation

- ◎High-speed, high-accuracy multiple CPU control system based on the iQ Platform
- ◎New high-speed system bus and inter-module sync realizes improved productivity and reduced TCO\*
- ◎Reducing development costs through intuitive engineering (GX Works3)
- ◎Robust security features (such as security key authentication, IP filter)



Product Specifications

Program capacity	40K steps to 1200K steps
LD instruction speed	0.98 ns
Available modules	I/O, analog, high-speed counter, positioning, simple motion, network module
Control system architecture	Rack-mounted modular based system
Supported networks	Ethernet, CC-Link IE Control Network, CC-Link IE Field Network, CC-Link, RS-232, RS-422/485

\*Total Cost of Ownership

PLC

MELSEC-Q Series Universal Model

Introducing the high-speed QCPU (QnUDVCPU) for faster processing of large data volumes.

- ◎Realize high-speed, high-accuracy machine control with various iQ Platform compatible controllers and multiple CPUs.
- ◎Easily connect to GOTs and Programming tools using built-in Ethernet port.
- ◎25 models from 10K steps small capacity to 1000K steps large capacity, are available.
- ◎Seamless communication and flexible integration at any network level.



Product Specifications

Program capacity	10K steps to 1000K steps
Number of I/O points [X/Y], number of I/O device points [X/Y]	256 points to 4096 points/8192 points
Basic instruction processing speed (LD instruction)	120 ns to 1.9 ns
External connection interface	USB (all models equipped), Ethernet, RS-232, memory card, extended SRAM cassette
Function module	I/O, analog, high-speed counter, positioning, simple motion, temperature input, temperature control, network module
Module extension style	Building block type
Network	Ethernet, CC-Link IE controller network, CC-Link IE field network, CC-Link, CC-Link/LT, MELSECNET/H, SSCNETIII (/H), AnyWire, RS-232, RS-422

PLC

MELSEC-L Series

“Light & Flexible” condensing various functions easily and flexibly.

- ◎CPU equipped as a standard with various functions including counter, positioning and CC-Link.
- ◎The base-less structure with high degree of freedom saves space in the control panel.
- ◎Easily confirm the system status and change the settings with the display unit.
- ◎Ten models are available in program capacities from 20 k steps to 260 k steps.



Product specifications

Program capacity	20 k steps/60 k steps/260 k steps
Number of input/output points [X/Y]	1024 points/4096 points
Number of input/output device points [X/Y]	8192 points
Basic instruction processing speed (LD instruction)	60 ns/ 40 ns/ 9.5 ns
External connection interface	USB, Ethernet, RS-232, SD memory card, CC-Link (L26CPU-BT/PBT)
Function modules	I/O, analog, high-speed counter, positioning, simple motion, temperature control, network module
Unit expansion style	Base-less structure
Network	Ethernet, CC-Link IE Field network, CC-Link, CC-Link/LT, SSCNETIII(/H), RS-232, RS-422

PLC

MELSEC-F Series

All-in-One Micro Programmable Controller equipped with all necessary functions in a compact body

- ◎Supporting small-scale control from 10 points to 384 points (using CC-Link) with an outstanding cost performance.
- ◎Wide range of options available for additional functions required by your system.
- ◎Easy to use and highly reliable. More than 12 million units have shipped worldwide. (April 2013)
- ◎Small-scale control is available in various networks such as CC-Link, Ethernet, and MODBUS.



Product specifications

Program capacity	16k steps (FX <sub>3S</sub> ) to 64 k steps (FX <sub>3U</sub> /FX <sub>3UC</sub> )
Number of input/output points	10 points (FX <sub>3S</sub> ) to 384 points (FX <sub>3U</sub> /FX <sub>3UC</sub> with CC-Link)
Basic instruction processing speed	0.21 μs (FX <sub>3S</sub> ) to 65 ns (FX <sub>3U</sub> /FX <sub>3UC</sub> )
External connection interface	RS-422, USB (FX <sub>3S</sub> /FX <sub>3U</sub> /FX <sub>3UC</sub> /FX <sub>3GE</sub> only), Ethernet (FX <sub>3GE</sub> only), CC-Link/LT (FX <sub>3UC</sub> -32MT-LT(-2) only)
Built-in functions	I/O, high-speed counter input, positioning pulse output, analog (FX <sub>3GE</sub> only)
Extended functions	I/O, analog, temperature control, high-speed counter, positioning, network
Unit expansion style	Backplane-less design
Network	Ethernet, CC-Link, CC-Link/LT, SSCNETIII, CANopen, J1939, RS-232C, RS-422, RS-485, MODBUS

HMI

Graphic Operation Terminal GOT2000 Series GT27 Model

To the top of HMIs with further user-friendly, satisfactory standard features.

- ◎Comfortable screen operation even if high-load processing (e.g. logging, device data transfer) is running. (Monitoring performance is twice faster than GT16)
- ◎Actual usable space without using a SD card is expanded to 128MB for more flexible screen design.
- ◎Multi-touch features, two-point press, and scroll operations for more user-friendliness.
- ◎Outline font and PNG images for clear, beautiful screen display.



Product Specifications

Screen size	15", 12.1", 10.4", 8.4"
Resolution	XGA, SVGA, VGA
Intensity adjustment	32-step adjustment
Touch panel type	Analog resistive film
Built-in interface	RS-232, RS-422/485, Ethernet, USB, SD card
Applicable software	GT Works3
Input power supply voltage	100 to 240VAC (+10%, -15%), 24VDC (+25%, -20%)



Inverter

FR-A800 Series

High-functionality, high-performance inverter

- ◎Realize even higher responsiveness during real sensor-less vector control or vector control, and achieve faster operating frequencies.
- ◎The latest automatic tuning function supports various induction motors and also sensor-less PM motors.
- ◎The standard model is compatible with EU Safety Standards STO (PLd, SIL2). Add options to support higher level safety standards.
- ◎Control and monitor inverters via CC-Link/CC-Link IE Field Network (option interface).



Product Specifications

Inverter capacity	200V class: 0.4kW to 90kW, 400V class: 0.4kW to 500kW
Control method	High-carrier frequency PWM control (Select from V/F, advanced magnetic flux vector, real sensorless vector or PM sensorless vector control), vector control (when using options)
Output frequency range	0.2 to 590Hz (upper limit is 400Hz when using advanced magnetic flux vector control, real sensorless vector control, vector control or PM sensorless vector control)
Regenerative braking torque (Maximum allowable duty)	200V class: 0.4K to 1.5K (150% at 3%ED) 2.2K/3.7K (100% at 3%ED) 5.5K/7.5K (100% at 2%ED) 11K to 55K (20% continuous) 75K or more (10% continuous), 400V class: 0.4K to 7.5K (100% at 2%ED) 11K to 55K (20% continuous) 75K or more (10% continuous)
Starting torque	200% 0.3Hz (3.7K or less), 150% 0.3Hz (5.5K or more) (when using real sensorless vector, vector control)





## Industry-leading level of high performance servo

- ◎Industry-leading level of basic performance: Speed frequency response (2.5kHz), 4,000,000 (4,194,304p/rev) encoder
- ◎Advanced one-touch tuning function achieves the one-touch adjustment of advanced vibration suppression control II, etc.
- ◎Equipped with large capacity drive recorder and machine diagnosis function for easy maintenance.
- ◎2-axis and 3-axis servo amplifiers are available for energy-conservative, space-saving, and low-cost machines.

## Product Specifications

Power supply specifications	1-phase/3-phase 200V AC, 1-phase 100V AC, 3-phase 400V AC, 48V DC/24V DC
Command interface	SSCNET III/H, SSCNET III (compatible in J3 compatibility mode), CC-Link IE Field Network interface with Motion, pulse train, analog
Control mode	Position/Speed/Torque/Positioning function/Fully closed loop
Speed frequency response	2.5kHz
Tuning function	Advanced one-touch tuning, advanced vibration suppression control II, robust filter, etc.
Functional safety	Conforms to functions of IEC/EN 61800-5-2, STO: Category 3 PL d, SIL 2 Conforms to Category 4 PL e, SIL 3 by a combination with MR-D30 functional safety unit
Compatible servo motor	Rotary servo motor (rated output: 0.01 to 55kW), linear servo motor (continuous thrust 50 to 3000N), direct drive motor (rated torque: 2 to 240N·m)



## Exceed your expectations.

- ◎10A frame model is over 16% smaller with a width of just 36mm!!
- ◎New integrated terminal covers.
- ◎Reduce your coil inventory by up to 50%.
- ◎Be certified to the highest international levels while work is ongoing to gain other country.

## Product specifications

Frame	10 A to 32 A
Applicable standards	Certification to various standards including IEC, JIS, CE, UL, TÜV, CCC.
Terminal cover	Standard terminal cover improves safety, simplifies ordering, and reduces inventory, etc.
Improved wiring	Wiring and operability are improved with streamlining wiring terminal BC specifications.
Operation coil rating	Wide range of operation coil ratings reduces number of coil types from 14 (N Series) to 7 types and simplifies selection.
Option units	Diverse lineup includes Auxiliary Contact Block, Operation Coil Surge Absorber Unit, Mechanical Interlock Unit.



## High speed, high precision and high reliability industrial robot

- ◎Compact body and slim arm design, allowing operating area to be expanded and load capacity increased.
- ◎The fastest in its class using high performance motors and unique driver control technology.
- ◎Improved flexibility for robot layout design considerations.
- ◎Optimal motor control tuning set automatically based on operating position, posture, and load conditions.

## Product Specifications

Degrees of freedom	Vertical:6    Horizontal:4
Installation	Vertical:Floor-mount, ceiling mount, wall mount (Range of motion for J1 is limited) Horizontal:Floor-mount
Maximum load capacity	Vertical:2-20kg    Horizontal:3-20kg
Maximum reach radius	Vertical:504-1503mm    Horizontal:350-1,000mm

### High-grade model equipped with advanced complete nano control

- ◎Achieve complete nano control with the latest RISC-CPU and high-speed optical servo network.
- ◎Realize super-high grade processing by combining the complete nano control, state-of-the-art SSS control and OMR control, etc.
- ◎Display of essential information of grouped on three screens to greatly reduce processing setup time with easy operability.
- ◎The M700VW Series with WindowsXPe and M700VS Series with integrated control unit and display type are available.



#### Product Specifications

Maximum number of control axes (NC axes + spindles + PLC axes)	16 axes (M720VW/M720VS have 12 axes)
Maximum number of part systems	Machining center system: 2 systems Lathe system: 4 systems
Least command increment	1nm (M720VW/M720VS 0.1μm)
Least control increment	1nm
Maximum program capacity	2,000KB (5,120m)
Maximum PLC program capacity	128,000 steps
Main functions (for machining center)	Simultaneous 5-axis machining, SSS control, high-speed high-accuracy control, tool nose point control, tilt plane machining, etc.
Main functions (for lathe)	Milling interpolation, 2-system simultaneous thread cutting, inter-system control axis synchronization, control axis superimposition, combination control, etc.



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## Precautions before use

This publication explains the typical features and functions of the products herein and does not provide restrictions and other information related to usage and module combinations. Before using the products, always read the product user manuals. Mitsubishi Electric will not be held liable for damage caused by factors found not to be the cause of Mitsubishi Electric; opportunity loss or lost profits caused by faults in Mitsubishi Electric products; damage, secondary damage, or accident compensation, whether foreseeable or not, caused by special factors; damage to products other than Mitsubishi Electric products; and to other duties.

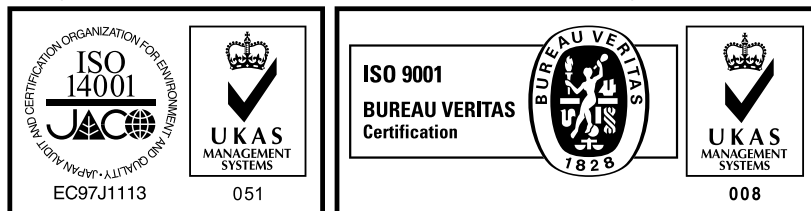
## For safe use

- To use the products given in this publication properly, always read the relevant manuals before use.
- The products have been manufactured as general-purpose parts for general industries, and have not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the products for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- The products have been manufactured under strict quality control. However, when installing the products where major accidents or losses could occur if the products fail, install appropriate backup or fail-safe functions in the system.

# Open Field Network CC-Link Compatible Product Catalog

Country/Region	Sales office	Tel/Fax
USA	MITSUBISHI ELECTRIC AUTOMATION, INC. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A.	Tel : +1-847-478-2100 Fax : +1-847-478-2253
Mexico	MITSUBISHI ELECTRIC AUTOMATION, INC. Mexico Branch Mariano Escobedo #69, Col. Zona Industrial, Tlalnepantla Edo, C.P.54030, Mexico	Tel : +52-55-3067-7500
Brazil	MITSUBISHI ELECTRIC DO BRASIL COMÉRCIO E SERVIÇOS LTDA. Rua Jussara, 1750-Bloco B Anexo, Jardim Santa Cecilia, CEP 06465-070, Barueri-SP, Brasil	Tel : +55-11-4689-3000 Fax : +55-11-4689-3016
Germany	MITSUBISHI ELECTRIC EUROPE B.V. German Branch Gothaer Strasse 8, D-40880 Ratingen, Germany	Tel : +49-2102-486-0 Fax : +49-2102-486-1120
UK	MITSUBISHI ELECTRIC EUROPE B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, U.K.	Tel : +44-1707-28-8780 Fax : +44-1707-27-8695
Ireland	MITSUBISHI ELECTRIC EUROPE B.V. Irish Branch Westgate Business Park, Ballymount, IRL-Dublin 24, Ireland	Tel : +353-1-4198800 Fax : +353-1-4198890
Italy	MITSUBISHI ELECTRIC EUROPE B.V. Italian Branch Centro Direzionale Colleoni-Palazzo Sirio Viale Colleoni 7, 20864 Agrate Brianza(Milano) Italy	Tel : +39-039-60531 Fax : +39-039-6053-312
Spain	MITSUBISHI ELECTRIC EUROPE, B.V. Spanish Branch Carretera de Rubí, 76-80-Apdo. 420, 08173 Sant Cugat del Vallés (Barcelona), Spain	Tel : +34-935-65-3131 Fax : +34-935-89-1579
France	MITSUBISHI ELECTRIC EUROPE B.V. French Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France	Tel : +33-1-55-68-55-68 Fax : +33-1-55-68-57-57
Czech Republic	MITSUBISHI ELECTRIC EUROPE B.V. Czech Branch Avenir Business Park, Radlicka 751/113e, 158 00 Praha5, Czech Republic	Tel : +420-251-551-470 Fax : +420-251-551-471
Poland	MITSUBISHI ELECTRIC EUROPE B.V. Polish Branch ul. Krakowska 50, 32-083 Balice, Poland	Tel : +48-12-630-47-00 Fax : +48-12-630-47-01
Sweden	MITSUBISHI ELECTRIC EUROPE B.V. (Scandinavia) Fjellievägen 8, SE-22736 Lund, Sweden	Tel : +46-8-625-10-00 Fax : +46-46-39-70-18
Russia	MITSUBISHI ELECTRIC EUROPE B.V. Russian Branch St. Petersburg office Piskarevsky pr. 2, bld 2, lit "Sch", BC "Benua", office 720; RU-195027 St. Petersburg, Russia	Tel : +7-812-633-3497 Fax : +7-812-633-3499
Turkey	MITSUBISHI ELECTRIC TURKEY A.Ş Ümraniye Branch Serifali Mahallesi Nutuk Sokak No:5, TR-34775 Umraniye, Istanbul, Turkey	Tel : +90-216-526-3990 Fax : +90-216-526-3995
UAE	MITSUBISHI ELECTRIC EUROPE B.V. Dubai Branch Dubai Silicon Oasis, P.O.BOX 341241, Dubai, U.A.E.	Tel : +971-4-3724716 Fax : +971-4-3724721
South Africa	ADROIT TECHNOLOGIES 20 Waterford Office Park, 189 Witkoppen Road, Fourways, Johannesburg, South Africa	Tel : +27-11-658-8100 Fax : +27-11-658-8101
China	MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD. No.1386 Hongqiao Road, Mitsubishi Electric Automation Center, Shanghai, China	Tel : +86-21-2322-3030 Fax : +86-21-2322-3000
Taiwan	SETSUYO ENTERPRISE CO., LTD. 6F, No.105, Wugong 3rd Road, Wugu District, New Taipei City 24889, Taiwan, R.O.C.	Tel : +886-2-2299-2499 Fax : +886-2-2299-2509
Korea	MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD. 7F-9F, Gangseo Hangang Xi-tower A, 401, Yangcheon-ro, Gangseo-Gu, Seoul 157-801, Korea	Tel : +82-2-3660-9530 Fax : +82-2-3664-8372
Singapore	MITSUBISHI ELECTRIC ASIA PTE. LTD. 307, Alexandra Road, Mitsubishi Electric Building, Singapore 159943	Tel : +65-6473-2308 Fax : +65-6476-7439
Thailand	MITSUBISHI ELECTRIC FACTORY AUTOMATION (THAILAND) CO., LTD. 12th Floor, SV.City Building, Office Tower 1, No. 896/19 and 20 Rama 3 Road, Kwaeng Bangpongpan, Khet Yannawa, Bangkok 10120, Thailand	Tel : +66-2682-6522 Fax : +66-2682-6020
Vietnam	MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED Hanoi Branch 6-Floor, Detech Tower, 8 Ton That Thuyet Street, My Dinh 2 Ward, Nam Tu Liem District, Hanoi, Vietnam	Tel : +84-4-3937-8075 Fax : +84-4-3937-8076
Indonesia	PT. MITSUBISHI ELECTRIC INDONESIA Gedung Jaya 11th Floor, JL. MH. Thamrin No.12, Jakarta Pusat 10340, Indonesia	Tel : +62-21-3192-6461 Fax : +62-21-3192-3942
India	MITSUBISHI ELECTRIC INDIA PVT. LTD. Pune Branch Emerald House, EL-3, J Block, M.I.D.C Bhosari, Pune-411026, Maharashtra, India	Tel : +91-20-2710-2000 Fax : +91-20-2710-2100
Australia	MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD. 348 Victoria Road, P.O. Box 11, Rydalmere, N.S.W 2116, Australia	Tel : +61-2-9684-7777 Fax : +61-2-9684-7245

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**MITSUBISHI ELECTRIC CORPORATION**  
 HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN  
[www.MitsubishiElectric.com](http://www.MitsubishiElectric.com)