MITSUBISHI ELECTRIC

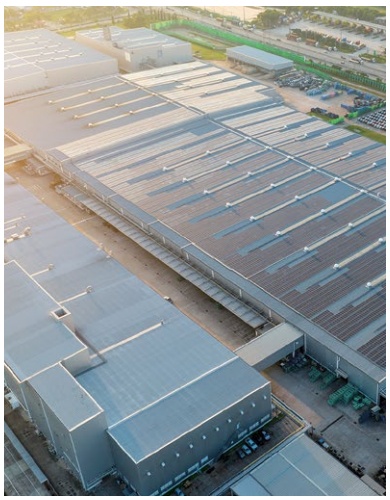
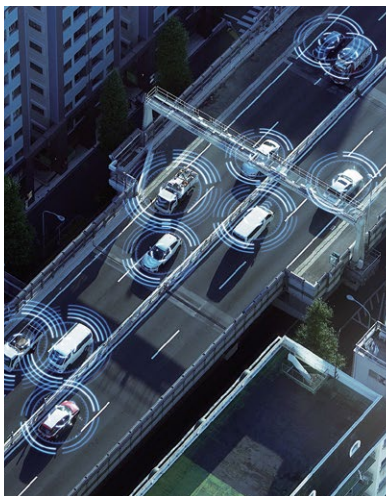
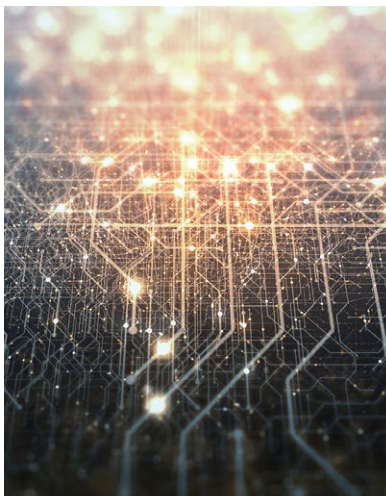
Changes for the Better

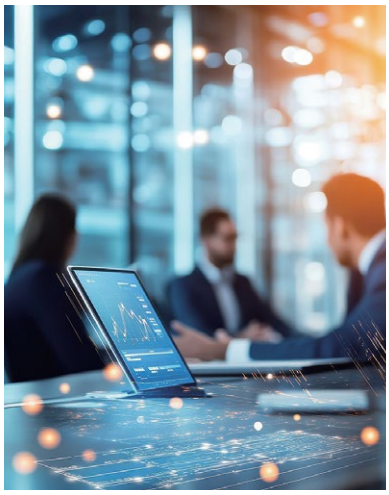
Automating the World

FACTORY AUTOMATION

Open Field Network CC-Link Compatible Product Catalog

CC-Link


Mitsubishi Electric Corporation operates across a wide range of sectors, from home appliances and building systems to railway solutions, factory automation equipment, and satellites and leverages the synergy created by these diverse sectors to address various challenges and provide optimal solutions worldwide.

We, the Mitsubishi Electric Group, will continue to evolve in "carbon neutrality" and a "circular economy" by promoting innovation in products and services and providing integrated solutions through our business activities, all in order to realize a vibrant and sustainable society.

Under "Changes for the Better" which reflects the Mitsubishi Electric Group's commitment to "always strive to achieve something better ", Mitsubishi Electric FA will expand the value of its products and services in the FA system business by advancing the provision and expansion of integrated solutions under the slogan "Automating the World " for an even better tomorrow. Through automation technology, we aim to contribute to innovation not only in the manufacturing industry but also across society as a whole.
We stand as your partner in shaping a smarter, more efficient, and more sustainable future.

SUSTAINABLE DEVELOPMENT GOALS

The Mitsubishi Electric Group is actively solving social issues, such as decarbonization and labor shortages, by providing production sites with energy-saving equipment and solutions that utilize automation systems, thereby helping towards a sustainable society.

Strategic Network, CC-Link

Strong Manufacturers
Stay One Step Ahead of Others with
CC-Link

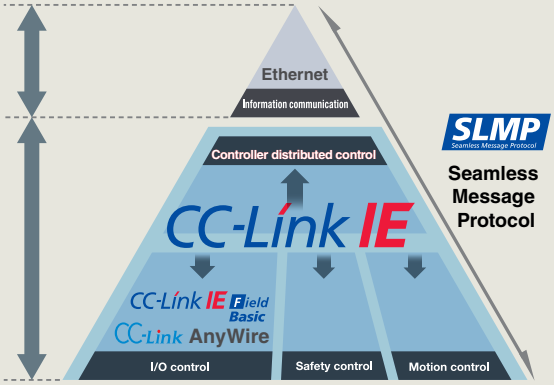
Connect with reliable networks for powerful factory automation

INDEX

Shaping the future of factory automation networks with the

Mitsubishi Electric provides total support in creating seamless networks in all scenes, from offices to production sites, under a consistent design philosophy. “CC-Link”, a SEMI-certified world standard field network originated in Japan, contributes to optimization of production control. Mitsubishi Electric proposes a network-based automation environment best fits the application utilizing “CC-Link” and upper level networks such as “Ethernet” and Ethernet based “CC-Link IE”.

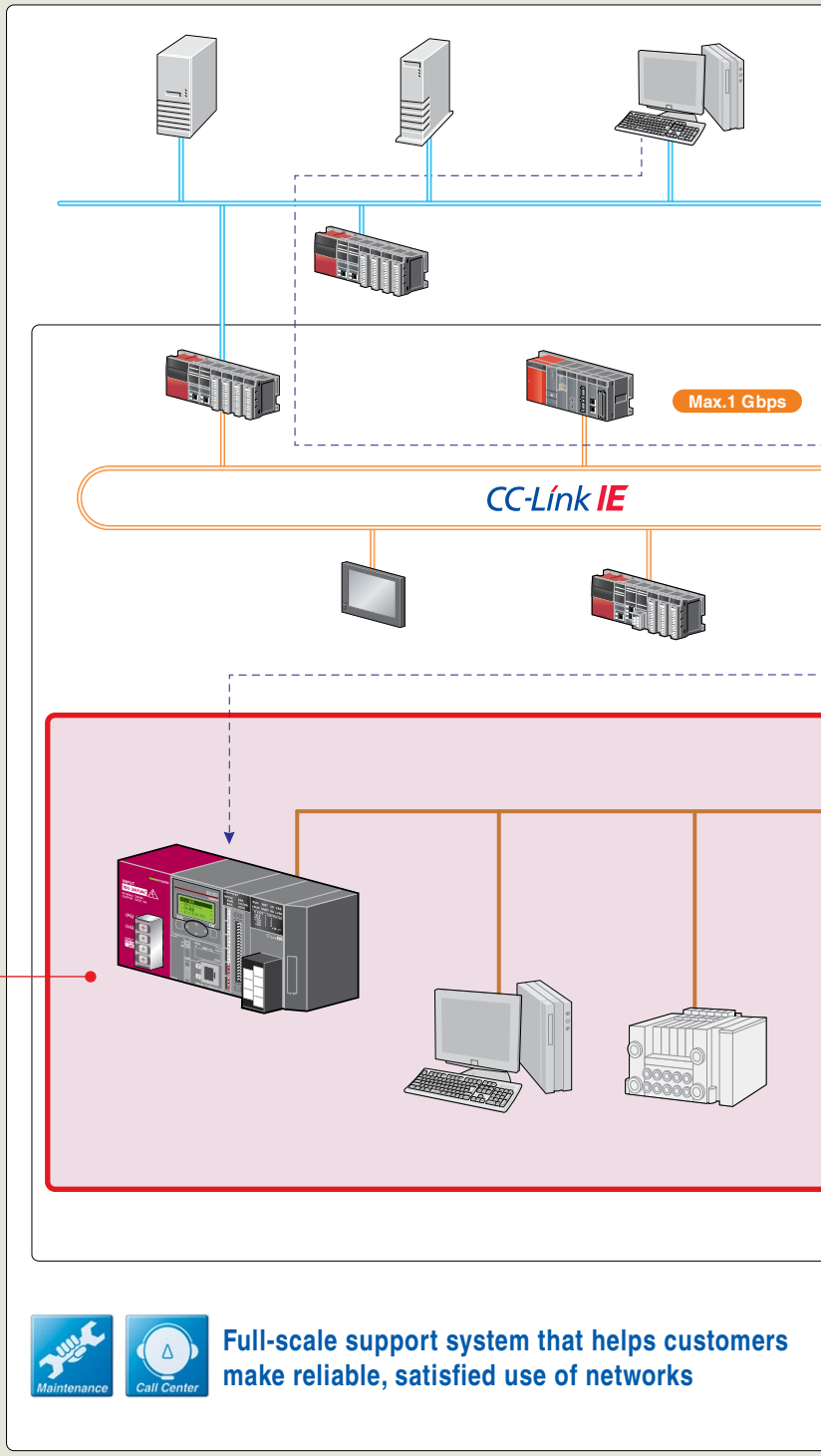
Seamless integration of the network over all layers



[Within line] Device level network CC-Link

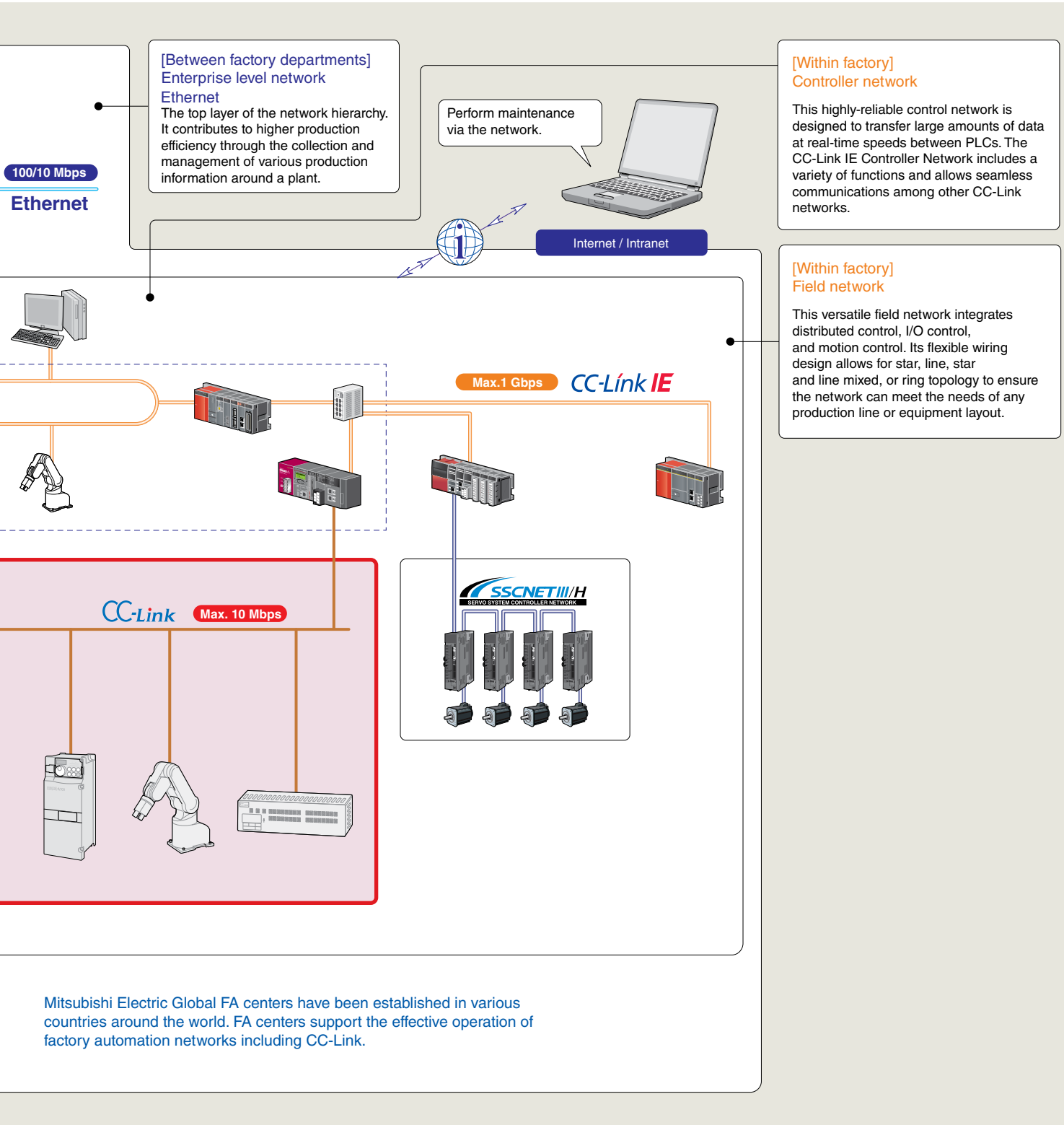
CC-Link is a high-speed and high-reliable deterministic I/O control network which realizes reduced wiring whilst offering multi-vendor compatible products. This open field network is a global standard originating from Japan and Asia.

- 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



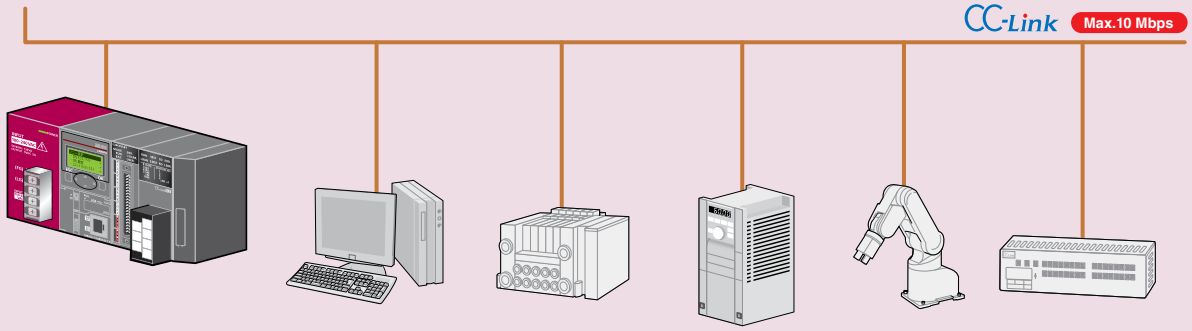
Maintenance Call Center **Full-scale support system that helps customers make reliable, satisfied use of networks**

seamless connectivity

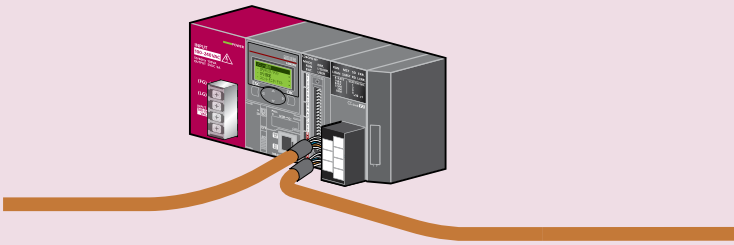


Mitsubishi Electric Global FA centers have been established in various countries around the world. FA centers support the effective operation of factory automation networks including CC-Link.

CC-Link - As the world standard network

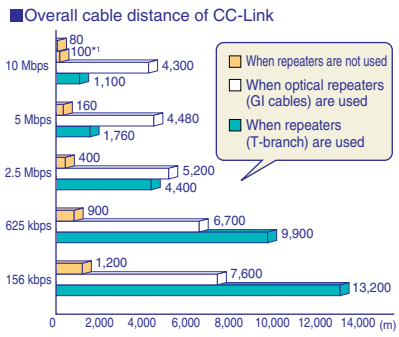


	CC-Link
Control methods	I/O control + intelligent distribution
Cable	Dedicated fixed cable, dedicated flexible cable, built-in power cable
Maximum number of link points	RX, RY: 8192 points each, RWr: 2048 words, RWw: 2048 words (Ver2.0)
I/O module lineup	Screw terminal block, spring terminal block, e-CON, push-in connector, waterproof connector, 40-pin connector
Max. cable distance	1200 m (at 156 kbps) Extendable up to 13.2 km when repeater is used
Parameter setup	GX Works3, GX Works2
Number of link points per station	<Ver1.0> RX, RY: 32 points each, RWr: 4 words, RWw: 4 words <Ver2.0> RX, RY: 128 points each, RWr: 32 words, RWw: 32 words
Network topology	Bus topology T-branch topology Star topology



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

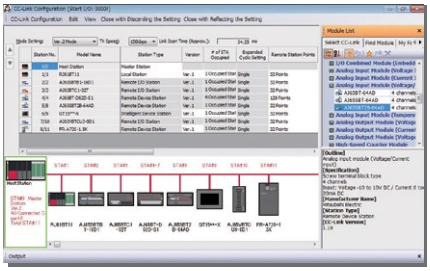
The total distance covered by the CC-Link network can be increased up to 1.2 km (at 156 kbps). Additionally, the transmission distance can be further extended through the use of T-branch repeater modules.
Optical repeaters can also be used so that CC-Link deal with various large-scale facilities.



*1: When the transmission speed is 10 Mbps and the total cable length exceeds 80 m, configure the system so that the total length of station-to-station cables connecting 10 consecutive stations is 10 m or longer. When the total number of connected stations including a master station is 10 or less, there is no restriction on the total length of station-to-station cables.

For improved setup efficiency [Simple parameter setup]

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



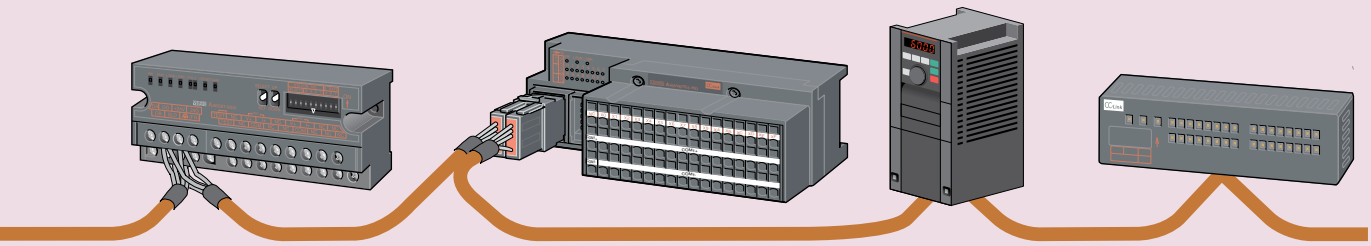
GX Works3

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.



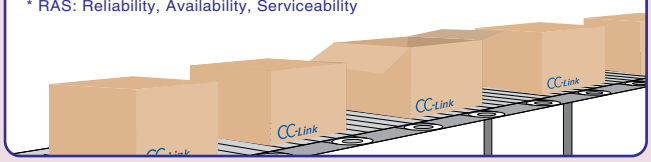
CC-Link Max.10 Mbps

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.

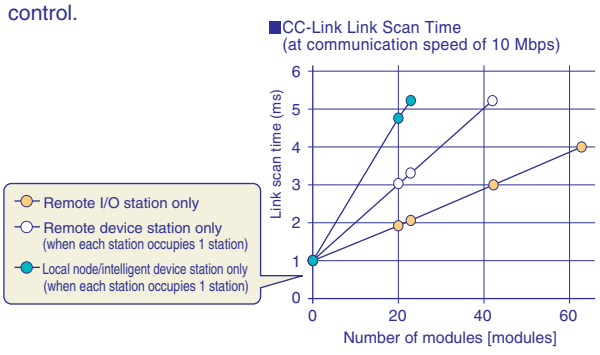
For non-stop operation [RAS functions]

CC-Link equips full RAS functionality by functions like Standby Master, Automatic Return, Device Station Isolation and Diagnostics/Link Status Confirmation.
* RAS: Reliability, Availability, Serviceability



For improved network reliability [Consistent network communication time]

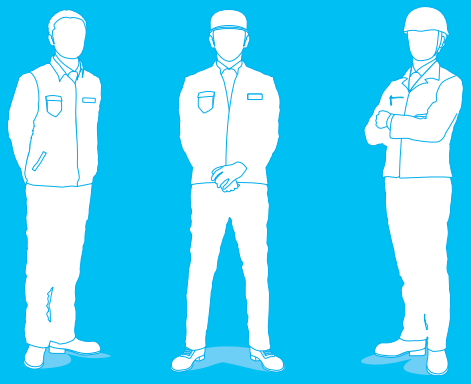
CC-Link guarantees the fixed cyclic transmission time and the cyclic transmission time is not affected by irregular message transmission. It is therefore possible to achieve highly stable control.



For those in design, production and maintenance

CC-Link provides solutions

CC-Link provides solutions
for each subject in the field.



Each person in charge of engineering, production and maintenance has his/her own subjects.
CC-Link responds to each subject with a solution.
CC-Link is an established open field network originated from Japan.
CC-Link provides a function for each subject on the network.

More functions

- 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 HMIs and ANDONs
- Use inverters and servos

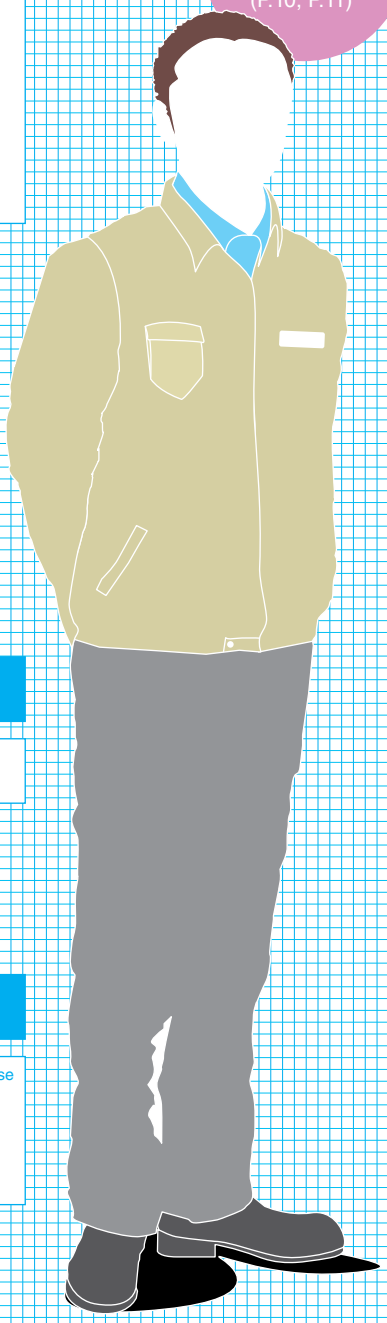
More simple

- Use various devices
- Easy network configuration

More secure

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

Engineering section
(P.10, P.11)



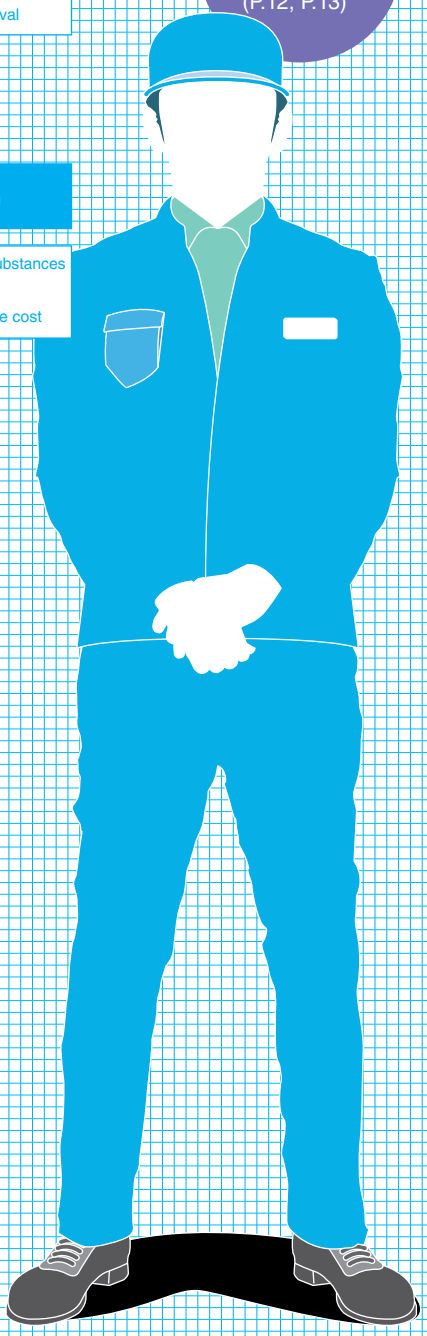
Production section
(P.12, P.13)

Device layout

- Arrange devices as we need
- Simple attachment and removal

Test / Operation

- Prevent troubles by foreign substances
- Quick check-up for wiring
- Save wiring man-hour and the cost



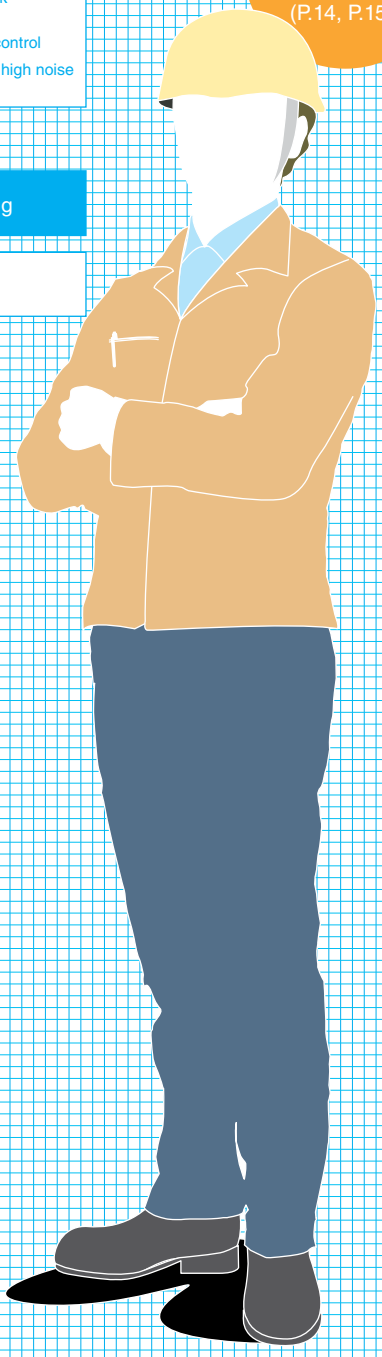
Maintenance section
(P.14, P.15)

Preventive maintenance

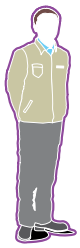
- Prevent troubles by network communication test
- Maintain PLCs by remote control
- Network configuration with high noise resistance

Troubleshooting

- Prevent system shutdown
- Easy troubleshooting



The solutions



CC-Link supports the facility improvement

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

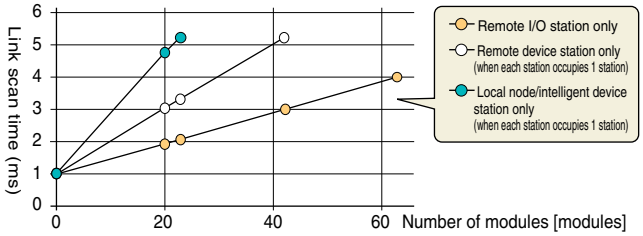
Remote I/O (RX, RY)=8192 points each
Remote register (RWw)=2048 words
(RWr)=2048 words (when Ver2.0 is used)

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 Ver.2.0-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.

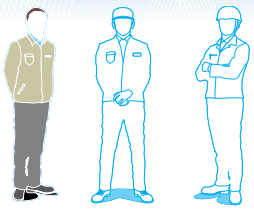
* Max. 64 modules when using the MELSEC iQ-R Series (RJ61BT11)'s remote device net Ver.1 mode or the remote device net Ver.2 mode.

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



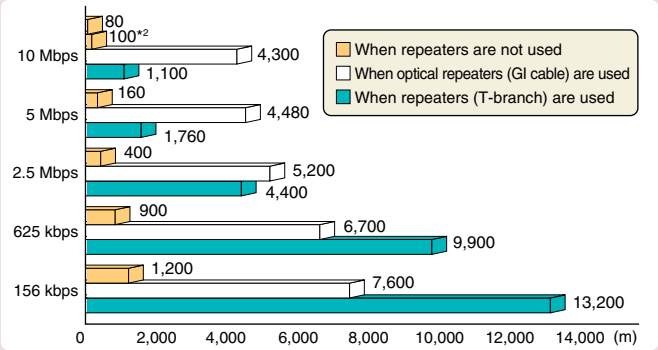
- Connect between manufacturing processes
- Network configuration for building management

▶ 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*1. The transmission distance can be extended up to 13.2 km*1 when T-branch repeaters are used.

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

■Overall cable distance of CC-Link



*2: When the transmission speed is 10 Mbps and the total cable length exceeds 80 m, configure the system so that the total length of station-to-station cables connecting 10 consecutive stations is 10 m or longer. When the total number of connected stations including a master station is 10 or less, there is no restriction on the total length of station-to-station cables.

Use various devices

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

CC-Link Ver.2.0 can transmit and receive data approx. 8 times larger than the earlier Ver.1.10/Ver.1.00.

■Comparison of communication data

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

Connect with HMIs and ANDONs

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

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

Easy network configuration

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

The integrated engineering software “GX Works3” and “GX Works2” 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

Also supports ...

Using various devices in a single network
▶ Diverse range of products supplied from many partner manufacturers.

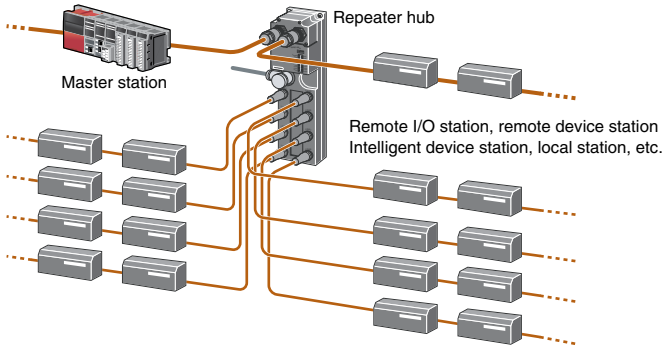
Exporting factory facilities and machineries overseas
▶ CC-Link complies with various safety standards including UL standards.

CC-Link provides various useful functions

Device layout as we need

▶CC-Link allows flexible installation.

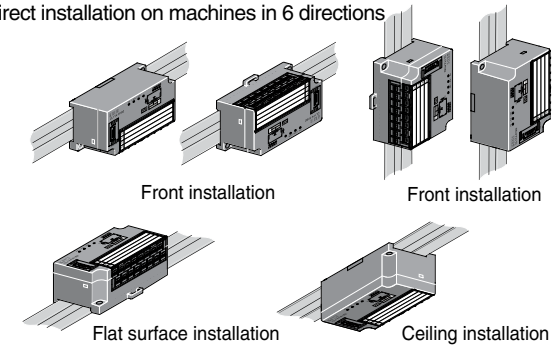
T-branch repeaters, wireless optical repeaters, optical repeaters, and repeater hubs are available with CC-Link. They enhance the freedom of application even at 10 Mbps.



▶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.

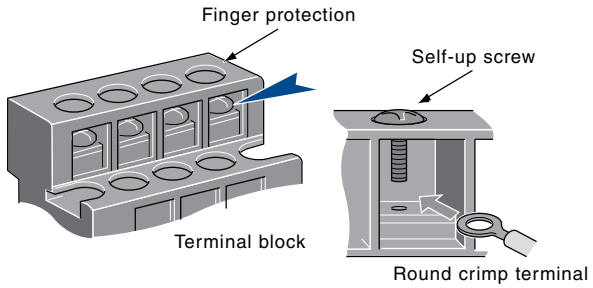
■Direct installation on machines in 6 directions



Save wiring man-hour and the cost

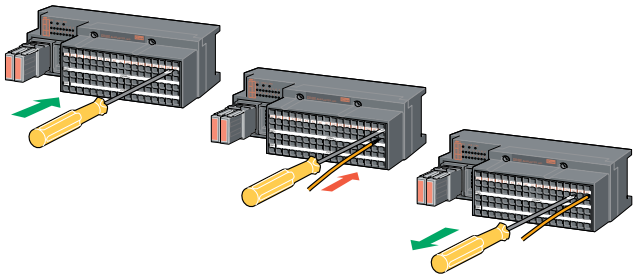
Dedicated connectors of CC-Link family are designed to reduce wiring works, cost and wiring mistakes.

Screw terminal block type



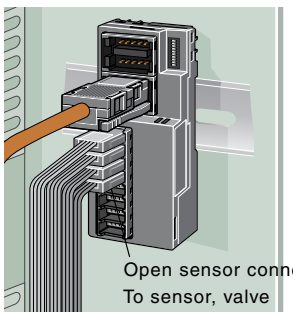
The round crimp terminal can be directly connected with the self-up screw by simply unfastening the terminal block screw.
* The specifications depend upon a product.

Spring clamp terminal block type



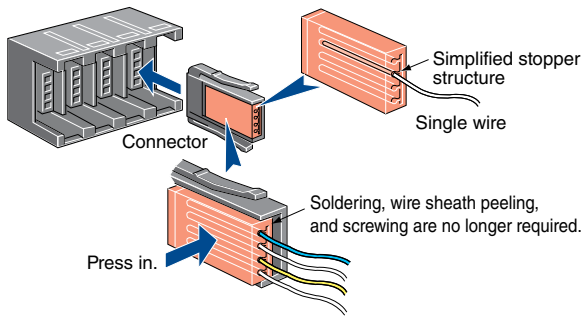
Spring clamps allow quick and easy connectivity.

Sensor connector (e-CON) type

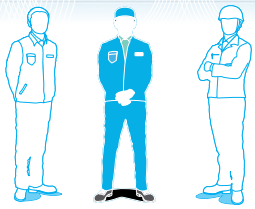


Utilizing the industry-standard e-CON, sensors can be replaced individually.

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.

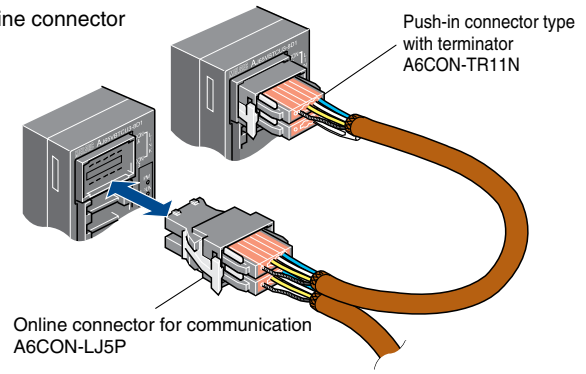


Simple attachment and removal

▶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.

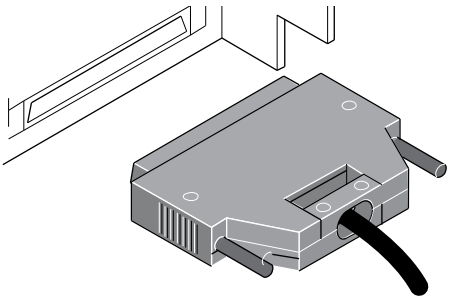
Quick checkup and startup

▶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.

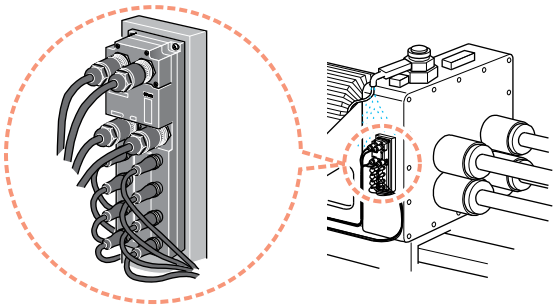
▶ Specific connection to application requirements

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.

CC-Link supports the maintenance work

Preventive maintenance

Prevent troubles by network communication test

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

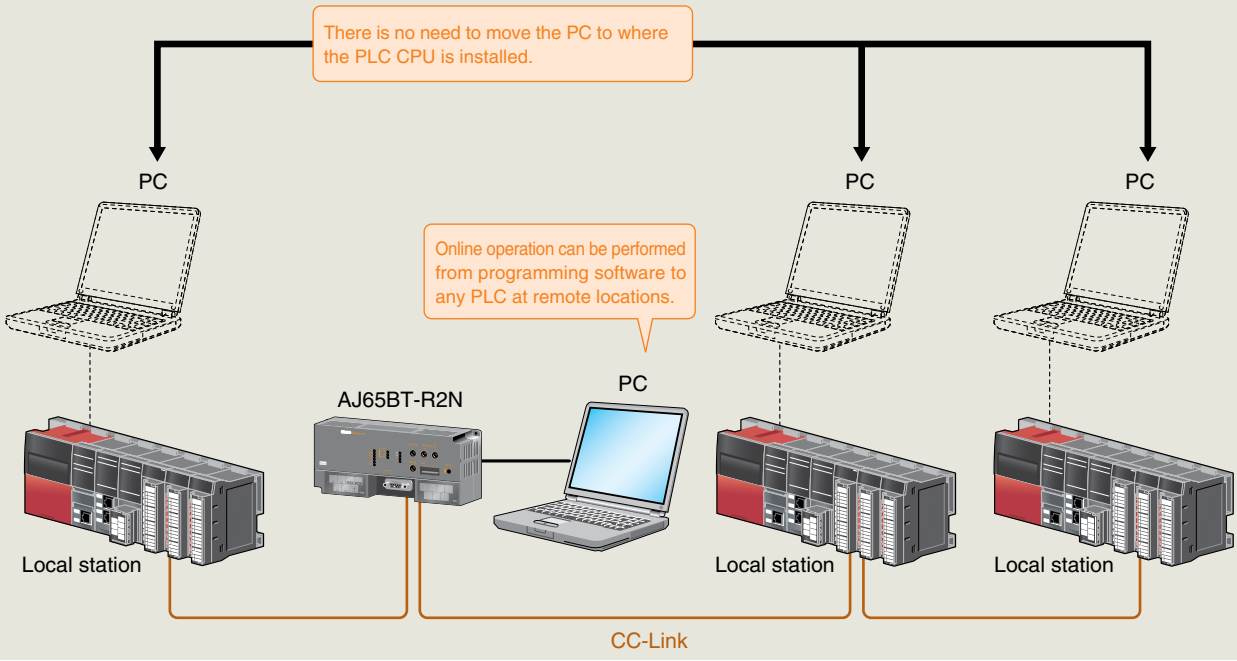
It is possible to check the data link status using special relays and registers. Hardware and line connection can be tested via offline tests.

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 maintenance from sites away from PLC master.

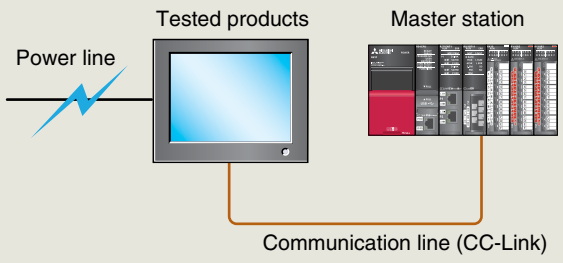


Network configuration with high noise resistance

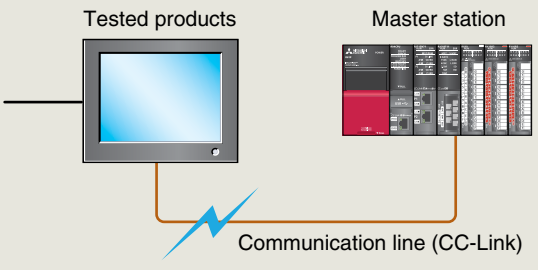
▶ CC-Link family compatible products are highly noise resistant guaranteed by conformance testing.

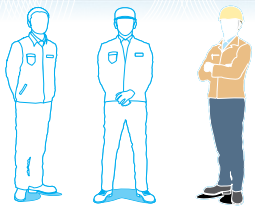
A conformance test is conducted for all products sold by CLPA partners. The test includes a power supply noise test and a bundle noise test.

■Power supply noise test (AC/DC)



■Bundle noise test





Troubleshooting

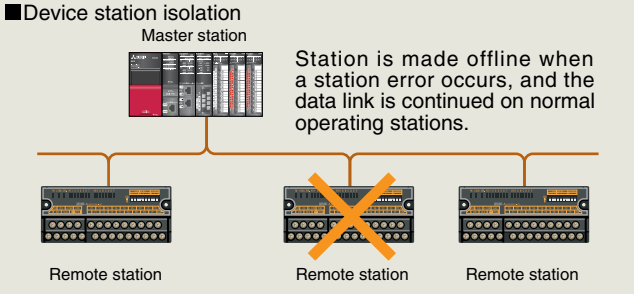
Prevent system shutdown

▶ CC-Link provides enhanced RAS functions.

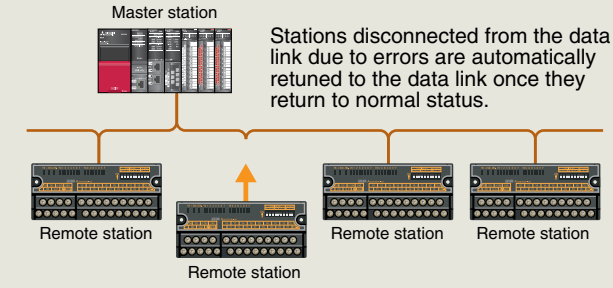
CC-Link realizes minimal system shutdowns by “error invalid station setting,” “device station isolation,” “automatic return,” “standby master station,” and “2-piece terminal block”.

<Error invalid station setting>
In the online mode, this setting temporarily prevents modules specified on GX Works3 from being treated as data link faulty stations.

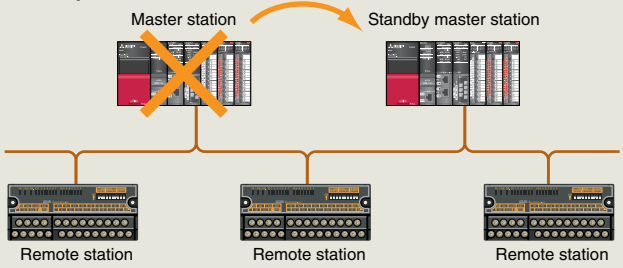
■Device station isolation



■Automatic return

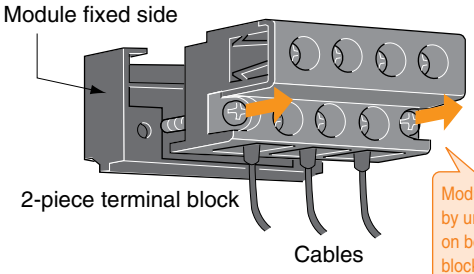


■Standby master station



By setting a local station as a standby master station, the data link can be continued even if an error occurs in the master station.

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

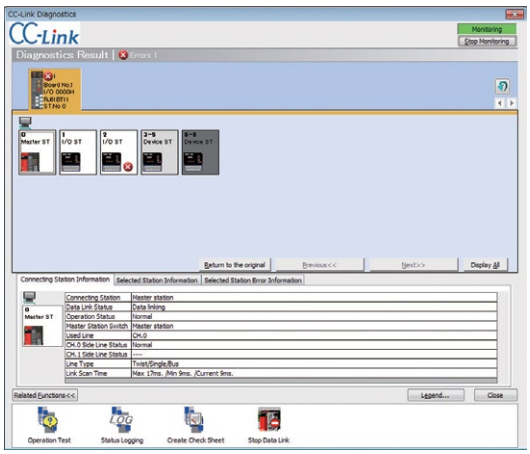


Modules can be separated by unfastening the screws on both edges of the terminal block with the cable still connected.

Easy troubleshooting

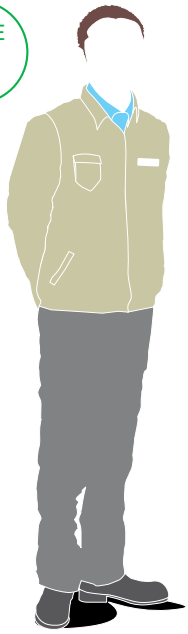
▶ Diagnose CC-Link family networks with GX Works3 or GX Works2.

The status of the CC-Link network can be monitored using GX Works3 or GX Works2.



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

CASE 1



Mr. A from the engineering section

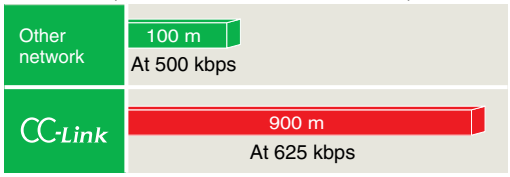
"The current network distance of our factory is limited to 100 m, and the transmission speed is unstable."

Mr. A 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.

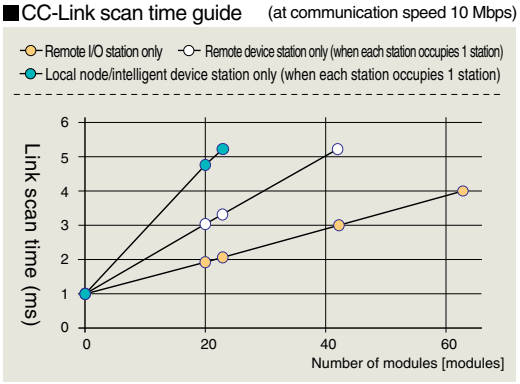
Feature 1 CC-Link is high-speed network with a long total cable distance.

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)

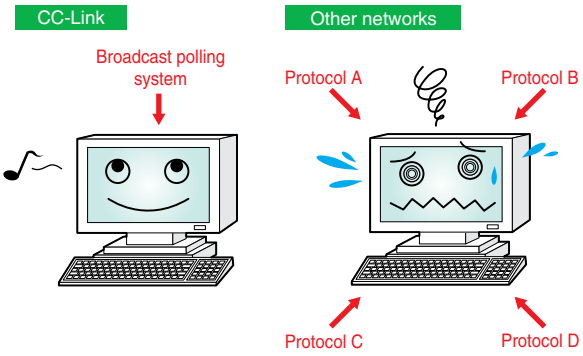


"Our factory's networks are complex because they use various protocols. How about CC-Link?"

CC-Link eliminates the need to use different protocols.

Feature 3 CC-Link has a single protocol.

■Protocol comparison



"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.

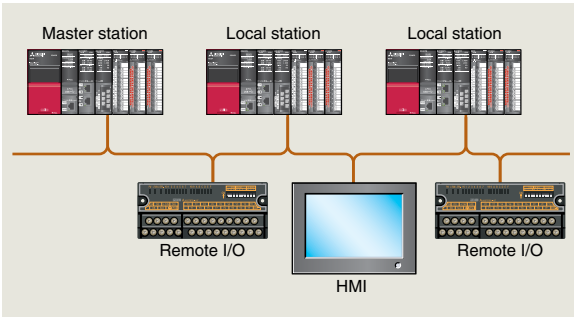
Feature 4 CC-Link offers quick return to the network system.

"We also need distributed controls."

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

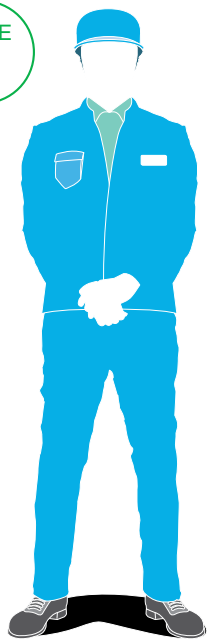
Feature 5 CC-Link is simple control level network.

■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

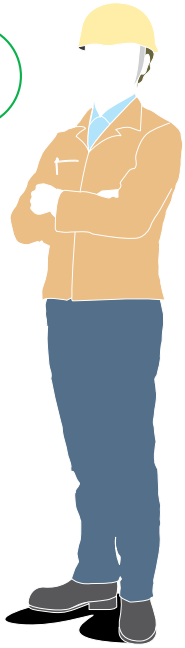
Item	CC-Link	Other networks	
Cable diameter	7 mm	Thick cable: 12 mm	Thin cable: 7 mm
Trunk/ Branch	Trunk and branch	Trunk	Branch
Total cable length (no repeater)	Max. 1200 m (156 kbps)	Max. 500 m (125 kbps)	Max. 100 m (125 kbps) (250 kbps) (500 kbps)

“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

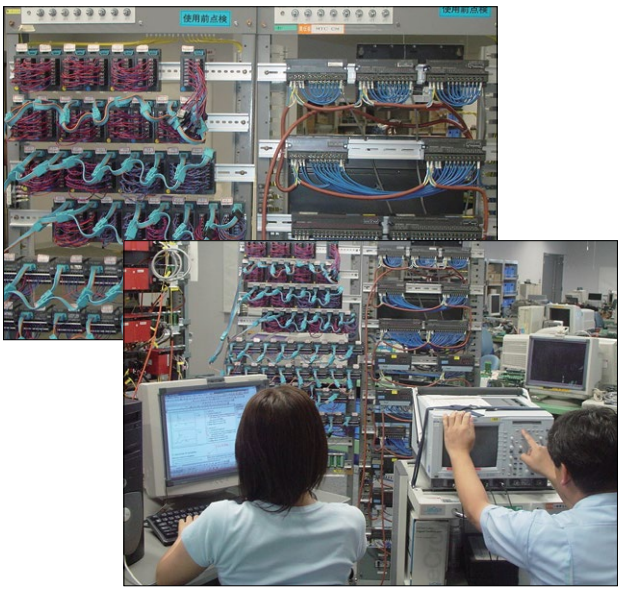


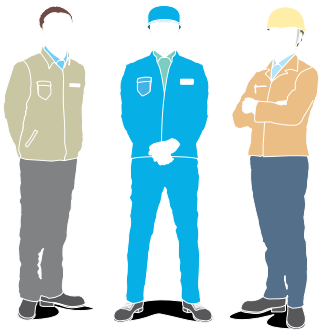
Mr. C from the maintenance section

“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.



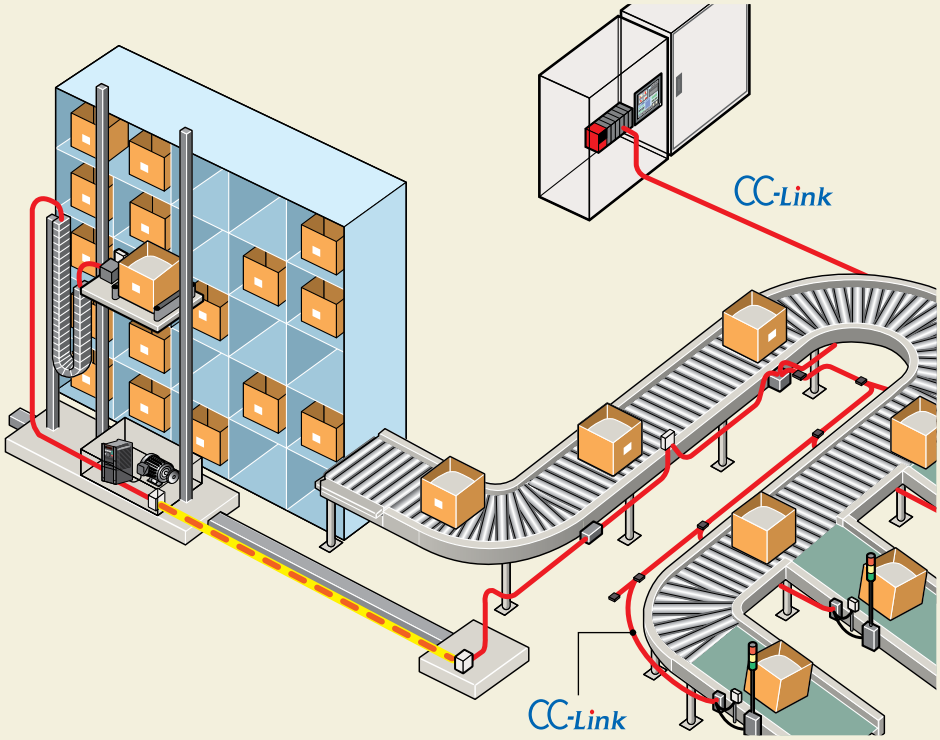


chose CC-Link!”

Networks is a key factor in various business applications.

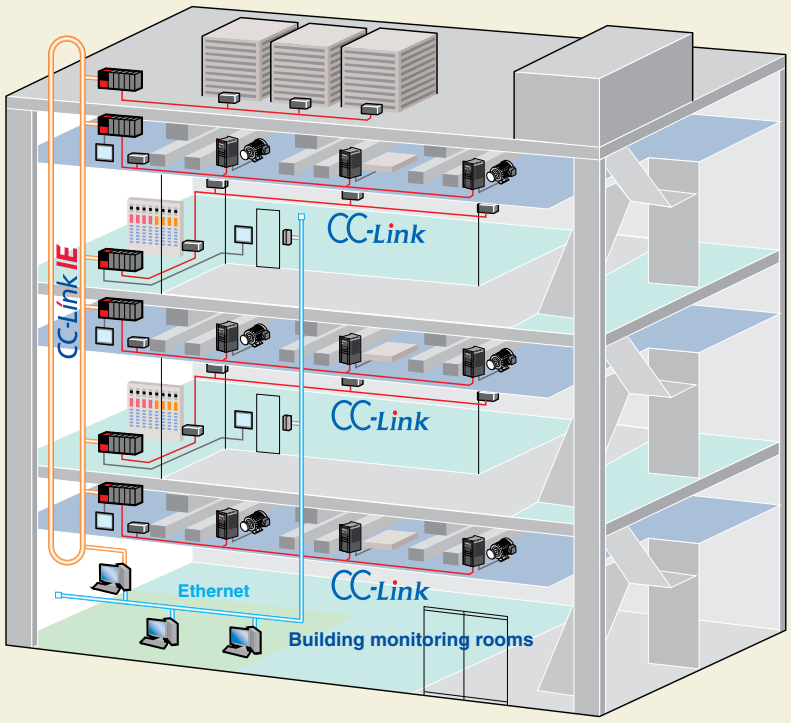
Material handling application

- Improved workability by repeaters
- Connection of various devices (Inverter, HMI)
- Cable specific to the application requirement



Building management application

- The total cable distance up to 13.2 km by using repeaters
- Distributed control
- Seamless communication between Ethernet, CC-Link IE Controller Network and CC-Link

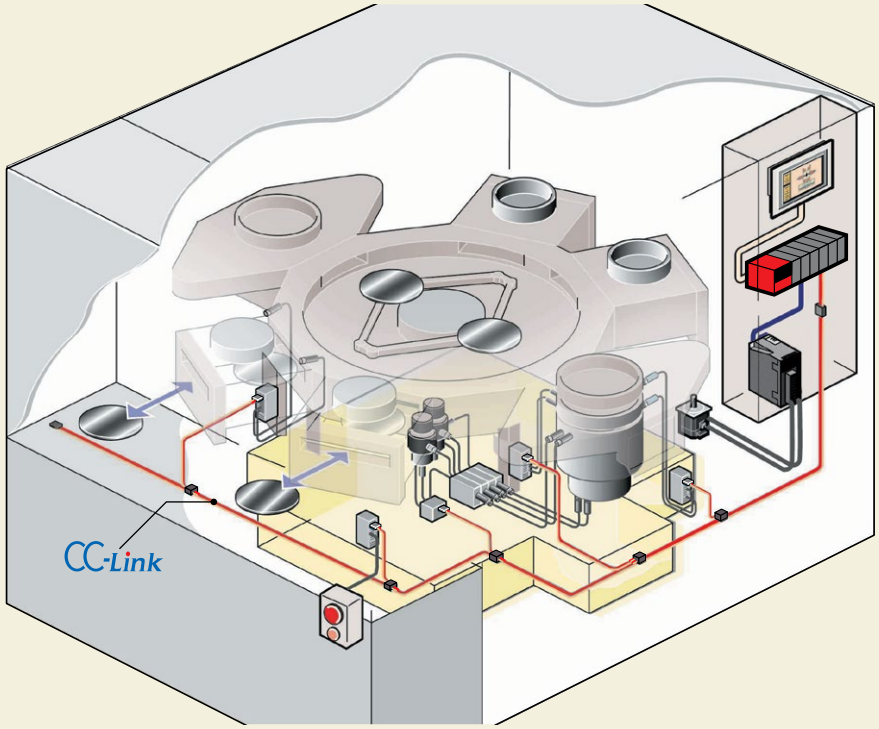


The CC-Link family is the best solution.

Semiconductor production application

High noise resistance

Compliant with EES



CC-Link

Master/local 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 iQ-F Series

FX5-CCL-MS

CC-Link V2

Occupied I/O points: 8 points*2
Occupied stations (as intelligent device stations): 1 to 4 (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 Output (sink type)
L26CPU-PBT Output (source type)

CC-Link V2

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

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 or GX Works2.
*2 The number of remote I/O points are added when using with the master station.

Bridge modules

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 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	-	8	≤ 20 ms	100...120 V AC/7 mA	2-wire type
AJ65SBTB2N-16A	AC	-	16	≤ 20 ms	100...120 V AC/7 mA	2-wire type
AJ65SBTB1-8D	DC	Positive/Negative common	8	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB3-8D	DC	Positive/Negative common	8	≤ 1.5 ms	24 V DC/7 mA	3-wire type
AJ65SBTB1-16D	DC	Positive/Negative common	16	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB1-16D1	DC	Positive/Negative common	16	≤ 0.2 ms	24 V DC/5 mA	1-wire type
AJ65SBTB3-16D	DC	Positive/Negative common	16	≤ 1.5 ms	24 V DC/7 mA	3-wire type
AJ65SBTB3-16KD	DC	Positive/Negative common	16	≤ 0.2 ms, ≤ 1.5 ms, ≤ 5 ms, ≤ 10 ms	24 V DC/7 mA	3-wire type
AJ65SBTB1-32D	DC	Positive/Negative common	32	≤ 1.5 ms	24 V DC/7 mA	1-wire type
AJ65SBTB1-32D1	DC	Positive/Negative common	32	≤ 0.2 ms	24 V DC/5 mA	1-wire type
AJ65SBTB1-32D5	DC	Positive/Negative common	32	≤ 1.5 ms	5 V DC/4 mA	1-wire type
AJ65SBTB1-32KD	DC	Positive/Negative common	32	≤ 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 /Max. load current	External connection
AJ65SBTB1-8T	Transistor	Sink	8	≤ 0.25 mA	Yes	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB1-8T1	Transistor	Sink	8	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB2-8T	Transistor	Sink	8	≤ 0.25 mA	Yes	12/24 V DC (0.5 A/point)	2-wire type
AJ65SBTB2-8T1	Transistor	Sink	8	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	2-wire type
AJ65SBTB1-16T	Transistor	Sink	16	≤ 0.25 mA	Yes	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB1-16T1	Transistor	Sink	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB2-16T	Transistor	Sink	16	≤ 0.25 mA	Yes	12/24 V DC (0.5 A/point)	2-wire type
AJ65SBTB2-16T1	Transistor	Sink	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	2-wire type
AJ65SBTB1-32T	Transistor	Sink	32	≤ 0.25 mA	Yes	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB1-32T1	Transistor	Sink	32	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB1-8TE	Transistor	Source	8	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)	1-wire type
AJ65SBTB1-16TE	Transistor	Source	16	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)	1-wire type
AJ65SBTB1B-16TE1	Transistor	Source	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB1-32TE1	Transistor	Source	32	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65SBTB2N-8R	Relay	-	8	-	No	24 V DC, 240 V AC (2 A/point)	2-wire type
AJ65SBTB2N-16R	Relay	-	16	-	No	24 V DC, 240 V AC (2 A/point)	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/point)	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/point)	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 /Max. load current	External connection
AJ65SBTB32-8DT	DC	Positive common	4	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	4	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	3-wire type/2-wire type
AJ65SBTB32-8DT2	DC	Positive common	4	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	4	≤ 0.1 mA	No	24 V DC (0.5 A/point)	3-wire type/2-wire type
AJ65SBTB1-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	8	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-16DT1	DC	Positive common	8	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink	8	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-16DT2	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	8	≤ 0.1 mA	No	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-16DT3	DC	Positive common	8	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink	8	≤ 0.1 mA	No	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB32-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	8	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	3-wire type/2-wire type
AJ65SBTB32-16DT2	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	8	≤ 0.1 mA	No	24 V DC (0.5 A/point)	3-wire type/2-wire type
AJ65SBTB1-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	16	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-32DT1	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.25 mA	Yes	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-32DT2	DC	Positive common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	16	≤ 0.1 mA	No	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-32DT3	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.1 mA	No	24 V DC (0.5 A/point)	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	16	≤ 0.1 mA	No	24 V DC (0.5 A/point)	1-wire type/1-wire type
AJ65SBTB1-32DTE1	DC	Negative common	16	≤ 1.5 ms	24 V DC/7 mA	Transistor	Source	16	≤ 0.1 mA	No	24 V DC (0.5 A/point)	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/point)	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/point)	3-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 /Max. load current	External connection
AJ65DBTB1-32T1	Transistor	Sink	32	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	1-wire type
AJ65DBTB1-32R	Relay	-	32	-	No	24 V DC/240 V AC (2 A/point)	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 /Max. load current	External connection
AJ65DBTB1-32DT1	DC	Positive common	16	≤ 10 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	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/point)	1-wire type/1-wire type

Spring clamp terminal block push-in type

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
AJ65ABTP3-16DE	DC	Negative common	16	≤ 1.5 ms	24 V DC/6 mA	3-wire type

Spring clamp terminal block type

AJ65VBTS□-□

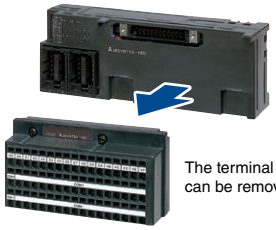
Features

◎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 /Max. load current	External connection
AJ65VBTS2-16T	Transistor	Sink	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	2-wire type
AJ65VBTS2-32T	Transistor	Sink	32	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	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 /Max. load current	External connection
AJ65VBTS32-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink	8	≤ 0.1 mA	No	24 V DC (0.5 A/point)	3-wire type/2-wire type
AJ65VBTS32-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.1 mA	No	12/24 V DC (0.5 A/point)	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 /Max. load current	External connection
AJ65VBTCE2-8T	Transistor	Sink	8	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)	2-wire type
AJ65VBTCE2-16T	Transistor	Sink	16	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)	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 /Max. load current	External connection
AJ65VBTCE32-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink	8	≤ 0.1 mA	Yes	24 V DC (0.1 A/point)	3-wire type/2-wire type
AJ65VBTCE32-32DT	DC	Positive common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.1 mA	Yes	24 V DC (0.1 A/point)	3-wire type/2-wire type
AJ65VBTCE3-32DTE	DC	Negative common	16	≤ 1.5 ms	24 V DC/5 mA	Transistor	Source	16	≤ 0.1 mA	Yes	24 V DC (0.1 A/point)	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
AJ65VBTCU3-16D1	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	3-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 /Max. load current	External connection
AJ65VBTCU2-16T	Transistor	Sink	16	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)	2-wire type
AJ65SBTC1-32T1	Transistor	Sink	32	≤ 0.1 mA	No	12/24 V DC (0.1 A/point)	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 /Max. load current	External connection
AJ65SBTC4-16DT2	DC	Positive common	8	≤ 1.5 ms	24 V DC/5 mA	Transistor	Sink	8	≤ 0.1 mA	No	24 V DC (0.5 A/point)	4-wire type
AJ65SBTC1-32DT3	DC	Positive common	16	≤ 0.2 ms	24 V DC/5 mA	Transistor	Sink	16	≤ 0.1 mA	No	24 V DC (0.1 A/point)	1-wire type/1-wire type

40-pin connector type AJ65SBTCF□-□ AJ65VBTCF□-□

Features

◎The 40-pin connector 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

Output modules

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

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 /Max. load current	External connection
AJ65FBTA42-16DTE	DC	Negative common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Source	8	≤ 0.30 mA	Yes	24 V DC (1.0 A/point)	2 to 4-wire type /2-wire type

Analog modules

▶Connector type

Analog input modules

One-touch connector type

CC-Link V2

AJ65VBTCU-68ADVN
AJ65VBTCU-68ADIN

Voltage input module

Model	Number of channels	Number of occupied points	Station type
AJ65VBTCU-68ADVN	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

CC-Link V2

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 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

Temperature input modules

Screw/2-piece terminal block type

AJ65SBT2B-64TD
AJ65SBT2B-64RD3

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

High-speed counter modules

AJ65BT-D62
AJ65BT-D62D

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

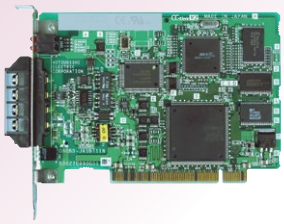
Features

◎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)

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® 11 (Home, Pro, Enterprise, Education, IoT Enterprise LTSC 2024*1)
- •Windows® 10 (IoT Enterprise LTSC 2021, IoT Enterprise LTSC 2019*2, IoT Enterprise LTSB 2016*2)
- •Windows Server® 2022, 2019, 2016*2 (Standard)

*1: Only Q81BD-J61BT11 is supported.
*2: Only the 64-bit version is supported.
* For details such as compatibility with the latest operating systems, please refer to the "Type Q80BD-J61BT11N/Q81BD-J61BT11 CC-Link System Master/Local Interface Board User's Manual (For SW1DNC-CCBD2-B) (SH-080527ENG)".

Item	Q80BD-J61BT11N	Q81BD-J61BT11
Description	PCI slot (half size)	PCI Express® X1, X2, X4, X8, X16 slot (half size)
Number of occupied stations	1...4*3	1...4*3
Station type	Master station, standby master station or local station	Master station, standby master station or local station

*3: 1 to 4 stations when remote net Ver.2 mode or remote net additional mode is used. 1 or 4 stations when remote net Ver.1 mode is used.

Repeater modules

Repeater module

AJ65BTS-RPH AJ65SBT-RPT AJ65SBT-RPS/RPG

AJ65BTS-RPH

AJ65SBT-RPT

AJ65SBT-RPS
AJ65SBT-RPG

Features

◎The following 3 types are available for various applications.

◎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

Type	Model	Description
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

Optional parts for I/O modules

One-touch connector plug

A6CON-P214 (20 pcs)
A6CON-P220 (20 pcs)
A6CON-P514 (20 pcs)
A6CON-P520 (20 pcs)

◎Applicable models
AJ65SBTC□-□ remote I/O module
AJ65VBTCU□-□ remote I/O module
AJ65VBTCU-□ analog module

One-touch connector plug for communication

A6CON-L5P (10 pcs)

◎Applicable models *1
Only FANC-110SBH, CS-110, and FA-CBL200PBSH can be used.

One-touch connector plug for power supply and FG

A6CON-PW5P (10 pcs)
A6CON-PW5P-SOD (10 pcs)

◎Applicable models *1

One-touch connector plug with terminating resister

A6CON-TR11N (1 pc)

◎Applicable models *1

Online connector for communication

A6CON-LJ5P (5 pcs)

◎Applicable models *1

Online connector for power supply

A6CON-PWJ5P (5 pcs)

◎Applicable models *1

Protective cover

A6CVR-16 (10 pcs)
A6CVR-32 (10 pcs)

◎Applicable models
AJ65SBTB□-□ remote I/O module
AJ65SBTC□-□ remote I/O module

Protective cover for sensor connector type (e-CON) module

A6CVR-VCE16 (10 pcs)

◎Applicable models
AJ65VBTCE□-16□ remote I/O module

40-pin connector

A6CON1 (1 pc)
A6CON2 (1 pc)
A6CON3 (1 pc)
A6CON4 (1 pc)

◎Applicable models
AJ65SBTC□-□ remote I/O module
AJ65VBTCF-□ remote I/O module

Protective cap for unused connector

A6CAP-WP2 (20 pcs)

◎Applicable models
AJ65FBTA□-□ remote I/O module

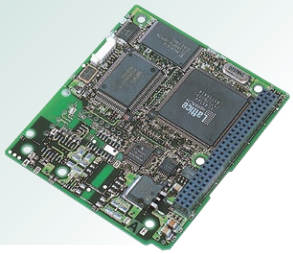
*1: AJ65VBTS□-□ remote I/O module, AJ65VBTCE□-□remote I/O module, AJ65VBTCU□-□remote I/O module, AJ65ABTP□-□remote I/O module, AJ65VBTCU-□ analog module

Embedded modules

For details, see "Open Field Network CC-Link Family Compatible Product Development Guidebook."

CC-Link Ver.2 embedded interface board

Q50BD-CCV2 CC-Link V2



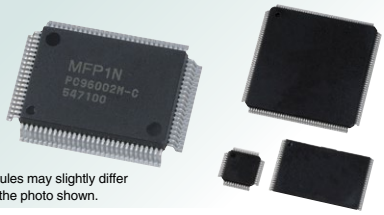
Features

◎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 CC-Link V2



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	Device kit
Ordering model name	Q6KT-NPC2OG51
Package unit	40 pcs
Application	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	MFP2N		MFP2AN		MFP3N	
Ordering model name	A6GA-CCMFP2NN60FN	A6GA-CCMFP2NN300FN	A6GA-CCMFP2ANN60F1 NEW	A6GA-CCMFP2ANN300F1 NEW	A6GA-CCMFP3NN60FN	A6GA-CCMFP3NN300FN
Package unit	60 pcs	300 pcs	60 pcs	300 pcs	60 pcs	300 pcs
Application	Remote I/O station	Remote I/O station	Remote I/O station	Remote I/O station	Remote device station	Remote device station

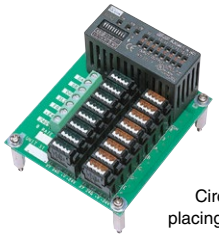
MFP: Mitsubishi Field-network Processor

Embedded I/O module

AJ65MBTL1N-16D AJ65MBTL1N-32D AJ65MBTL1N-16T AJ65MBTL1N-32T AJ65MBTL1N-16DT

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 /Max. load current
AJ65MBTL1N-16T	Transistor	Sink	16	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)
AJ65MBTL1N-32T	Transistor	Sink	32	≤ 0.1 mA	Yes	12/24 V DC (0.1 A/point)

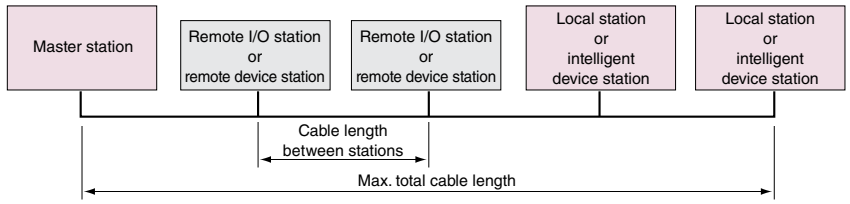
I/O combined module

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 /Max. load current
AJ65MBTL1N-16DT	DC	Positive common	8	≤ 1.5 ms	24 V DC/7 mA	Transistor	Sink	8	≤ 0.1 mA	Yes	24 V DC (0.1 A/point)

*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.

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	Max. number of link points	CC-Link Ver.1	• Remote input/output (RX, RY): 2048 points • Remote register (RWw): 256 points • Remote register (RWr): 256 points
		CC-Link Ver.2	• Remote input/output (RX, RY): 8192 points • Remote register (RWw): 2048 points • Remote register (RWr): 2048 points
	Number of link points per station		See the number of link points per number of occupied stations on page 32.
Communication specifications	Transmission rate		10 M/5 M/2.5 M/625 k/156 kbps
	Communication method		Broadcast polling method
	Synchronization method		Frame synchronization method
	Encoding method		NRZI method
	Transmission path type		Bus type (conforming to EIA RS-485)
	Transmission format		Conforming to HDLC
	Error control system		CRC ($X^{16} + X^{12} + X^5 + 1$)
	Max. number of connected units		64 units
	Remote station numbers		1 to 64
	Max. total cable length and cable length between stations		 CC-Link dedicated cable compatible with ver.1.10 (with use of 110-ohm termination resistance)
	Connection cables		CC-Link dedicated cables compatible with ver.1.10 • Use the dedicated cable certified by the CC-Link Partner Association. • If other cables are used, the operation will not be guaranteed. • Cables of different manufacturers can be used together if the cables are compatible with ver.1.10. • For the specifications for the CC-Link dedicated cables and the contact information, see the partner product catalogs issued by the CC-Link Partner Association, or visit the CC-Link Partner Association website, https://www.cc-link.org. • The CC-Link dedicated cables, CC-Link dedicated high-performance cables and CC-Link ver.1.10 dedicated cables cannot be used together.

Transmission rate	Cable length between stations	Max. total cable length
156 kbps	20 cm or more	1200 m
625 kbps		900 m
2.5 Mbps		400 m
5 Mbps		160 m
10 Mbps		100 m*1
		80 m

Remarks

If the CC-Link cables are connected through relay terminal blocks or relay connectors, communication errors may occur on some systems. The cables should be connected directly to each CC-Link module, or CC-Link repeater modules should be used.
For the recommended conditions for connecting relay connectors between CC-Link cables, see the following table.

Communication speed		156 kbps	625 kbps	10, 5 and 2.5 Mbps are not allowed.
Cable length between stations	Between master/local station or intelligent device station and adjacent station	1 m or more		In the case of a system consisting of only remote I/O and remote device stations
		2 m or more		In the case of a system configuration including local stations and intelligent device stations
	Between remote I/O station and remote device station (shortest cable)	30 cm or more		-
Max. transmission distance		500 m	100 m	-
Distance between relay connectors		No limitation		-

*1: When the transmission speed is 10 Mbps and the total cable length exceeds 80 m, configure the system so that the total length of station-to-station cables connecting 10 consecutive stations is 10 m or longer. When the total number of connected stations including a master station is 10 or less, there is no restriction on the total length of station-to-station cables.

Number of link points per number of occupied stations

The number of link points per number of occupied stations is shown below.

Item			CC-Link Ver.1	CC-Link Ver.2			
				Extended cyclic setting			
				Single	Double	Quadruple	Octuple
Number of link points per number of occupied stations	1 station occupied	Remote I/O (RX, RY)	32 points (30 points for local station)	32 points (30 points for local station)	32 points (30 points for local station)	64 points (62 points for local station)	128 points (126 points for local station)
		Remote register (RWw)	4 points	4 points	8 points	16 points	32 points
		Remote register (RWr)	4 points	4 points	8 points	16 points	32 points
	2 stations occupied	Remote I/O (RX, RY)	64 points (62 points for local station)	64 points (62 points for local station)	96 points (94 points for local station)	192 points (190 points for local station)	384 points (382 points for local station)
		Remote register (RWw)	8 points	8 points	16 points	32 points	64 points
		Remote register (RWr)	8 points	8 points	16 points	32 points	64 points
	3 stations occupied	Remote I/O (RX, RY)	96 points (94 points for local station)	96 points (94 points for local station)	160 points (158 points for local station)	320 points (318 points for local station)	640 points (638 points for local station)
		Remote register (RWw)	12 points	12 points	24 points	48 points	96 points
		Remote register (RWr)	12 points	12 points	24 points	48 points	96 points
	4 stations occupied	Remote I/O (RX, RY)	128 points (126 points for local station)	128 points (126 points for local station)	224 points (222 points for local station)	448 points (446 points for local station)	896 points (894 points for local station)
		Remote register (RWw)	16 points	16 points	32 points	64 points	128 points
		Remote register (RWr)	16 points	16 points	32 points	64 points	128 points

Maximum number of connected units

Remote net Ver.1 mode

A total of 64 remote I/O stations, remote device stations, local stations, standby master stations and intelligent device stations can be connected to one master station. However, all the following conditions must be met.

Item		Number of modules
Condition 1	{(1 × a) + (2 × b) + (3 × c) + (4 × d)} ≤ 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
Condition 2	{(16 × A) + (54 × B) + (88 × C)} ≤ 2304	A. Number of remote I/O stations ≤ 64 B. Number of remote device stations ≤ 42 C. Number of local stations, standby master stations and intelligent device stations ≤ 26

Remote net Ver.2 mode

A total of 64 remote I/O stations, remote device stations, local stations, standby master stations and intelligent device stations can be connected to one master station. However, all the following conditions must be met.

Item		Number of modules
Condition 1	{(a + a2 + a4 + a8) + (b + b2 + b4 + b8) × 2 + (c + c2 + c4 + c8) × 3 + (d + d2 + d4 + d8) × 4} ≤ 64	a: Total number of Ver.1-compatible device stations occupying 1 station and Ver.2-compatible device stations occupying 1 station with the expanded cyclic setting of “Single” b: Total number of Ver.1-compatible device stations occupying 2 stations and Ver.2-compatible device stations occupying 2 stations with the expanded cyclic setting of “Single” c: Total number of Ver.1-compatible device stations occupying 3 stations and Ver.2-compatible device stations occupying 3 stations with the expanded cyclic setting of “Single” d: Total number of Ver.1-compatible device stations occupying 4 stations and Ver.2-compatible device stations occupying 4 stations with the expanded cyclic setting of “Single” a2: Number of Ver.2-compatible device stations occupying 1 station with the expanded cyclic setting of “Double” b2: Number of Ver.2-compatible device stations occupying 2 stations with the expanded cyclic setting of “Double” c2: Number of Ver.2-compatible device stations occupying 3 stations with the expanded cyclic setting of “Double” d2: Number of Ver.2-compatible device stations occupying 4 stations with the expanded cyclic setting of “Double” a4: Number of Ver.2-compatible device stations occupying 1 station with the expanded cyclic setting of “Quadruple” b4: Number of Ver.2-compatible device stations occupying 2 stations with the expanded cyclic setting of “Quadruple” c4: Number of Ver.2-compatible device stations occupying 3 stations with the expanded cyclic setting of “Quadruple” d4: Number of Ver.2-compatible device stations occupying 4 stations with the expanded cyclic setting of “Quadruple” a8: Number of Ver.2-compatible device stations occupying 1 station with the expanded cyclic setting of “Octuple” b8: Number of Ver.2-compatible device stations occupying 2 stations with the expanded cyclic setting of “Octuple” c8: Number of Ver.2-compatible device stations occupying 3 stations with the expanded cyclic setting of “Octuple” d8: Number of Ver.2-compatible device stations occupying 4 stations with the expanded cyclic setting of “Octuple”
Condition 2	[{(a × 32) + (a2 × 32) + (a4 × 64) + (a8 × 128)} + [(b × 64) + (b2 × 96) + (b4 × 192) + (b8 × 384)} + [(c × 96) + (c2 × 160) + (c4 × 320) + (c8 × 640)} + [(d × 128) + (d2 × 224) + (d4 × 448) + (d8 × 896)}] ≤ 8192	
Condition 3	[{(a × 4) + (a2 × 8) + (a4 × 16) + (a8 × 32)} + [(b × 8) + (b2 × 16) + (b4 × 32) + (b8 × 64)} + [(c × 12) + (c2 × 24) + (c4 × 48) + (c8 × 96)} + [(d × 16) + (d2 × 32) + (d4 × 64) + (d8 × 128)}] ≤ 2048	
Condition 4	{(16 × A) + (54 × B) + (88 × C)} ≤ 2304	A: Number of remote I/O stations ≤ 64 B: Number of remote device stations ≤ 42 C: Number of local stations, standby master stations and intelligent device stations ≤ 26

Remote device net Ver.1 mode

A total of 64 remote I/O stations and remote device stations can be connected to one master station. However, all the following conditions must be met.

Item		Number of modules
Condition 1	{(1 × a) + (2 × b) + (3 × c) + (4 × d)} ≤ 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

Remote device net Ver.2 mode

A total of 64 remote I/O stations and remote device stations can be connected to one master station. However, all the following conditions must be met.

Item		Number of modules
Condition 1	{(a + a2 + a4 + a8) + (b + b2 + b4 + b8) × 2 + (c + c2 + c4 + c8) × 3 + (d + d2 + d4 + d8) × 4} ≤ 64	a: Total number of Ver.1-compatible remote stations occupying 1 station and Ver.2-compatible remote device stations occupying 1 station (extended cyclic setting: single) b: Total number of Ver.1-compatible remote stations occupying 2 stations and Ver.2-compatible remote device stations occupying 2 stations (extended cyclic setting: single) c: Total number of Ver.1-compatible remote stations occupying 3 stations and Ver.2-compatible remote device stations occupying 3 stations (extended cyclic setting: single) d: Total number of Ver.1-compatible remote stations occupying 4 stations and Ver.2-compatible remote device stations occupying 4 stations (extended cyclic setting: single) a2: Number of Ver.2-compatible remote device stations occupying 1 station (extended cyclic setting: double) b2: Number of Ver.2-compatible remote device stations occupying 2 stations (extended cyclic setting: double) c2: Number of Ver.2-compatible remote device stations occupying 3 stations (extended cyclic setting: double) d2: Number of Ver.2-compatible remote device stations occupying 4 stations (extended cyclic setting: double) a4: Number of Ver.2-compatible remote device stations occupying 1 station (extended cyclic setting: quadruple) b4: Number of Ver.2-compatible remote device stations occupying 2 stations (extended cyclic setting: quadruple) c4: Number of Ver.2-compatible remote device stations occupying 3 stations (extended cyclic setting: quadruple) d4: Number of Ver.2-compatible remote device stations occupying 4 stations (extended cyclic setting: quadruple) a8: Number of Ver.2-compatible remote device stations occupying 1 station (extended cyclic setting: octuple) b8: Number of Ver.2-compatible remote device stations occupying 2 stations (extended cyclic setting: octuple) c8: Number of Ver.2-compatible remote device stations occupying 3 stations (extended cyclic setting: octuple) d8: Number of Ver.2-compatible remote device stations occupying 4 stations (extended cyclic setting: octuple)
Condition 2	[{(a × 32) + (a2 × 32) + (a4 × 64) + (a8 × 128)} + [(b × 64) + (b2 × 96) + (b4 × 192) + (b8 × 384)} + [(c × 96) + (c2 × 160) + (c4 × 320) + (c8 × 640)} + [(d × 128) + (d2 × 224) + (d4 × 448) + (d8 × 896)}] ≤ 8192	
Condition 3	[{(a × 4) + (a2 × 8) + (a4 × 16) + (a8 × 32)} + [(b × 8) + (b2 × 16) + (b4 × 32) + (b8 × 64)} + [(c × 12) + (c2 × 24) + (c4 × 48) + (c8 × 96)} + [(d × 16) + (d2 × 32) + (d4 × 64) + (d8 × 128)}] ≤ 2048	

General specifications

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

<table>
<tr><th rowspan="2">Item</th><th colspan="6">Specifications</th></tr>
<tr><th colspan="6">CC-Link</th></tr>
<tr><td>Operating ambient temperature</td><td colspan="6">0…55˚C</td></tr>
<tr><td>Storage ambient temperature</td><td colspan="6">–20…75˚C</td></tr>
<tr><td>Operating ambient humidity</td><td colspan="6">10…90 %RH, non-condensing
(The waterproof type remote I/O modules conform to the IP67. *1)</td></tr>
<tr><td>Storage ambient humidity</td><td colspan="6">10…90 %RH, non-condensing</td></tr>
<tr><td rowspan="5">Vibration resistance</td><td rowspan="5">Conforming to
IEC 61131-2,
JIS B 3502</td><td></td><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td>Number of sweeps</td></tr>
<tr><td rowspan="2">Under
intermittent vibration</td><td>5…8.4 Hz</td><td>-</td><td>3.5 mm</td><td rowspan="4">10 times each
in X, Y and Z directions</td></tr>
<tr><td>8.4…150 Hz</td><td>9.8 m/s²</td><td>-</td></tr>
<tr><td rowspan="2">Under
continuous vibration</td><td>5…8.4 Hz</td><td>-</td><td>1.75 mm</td></tr>
<tr><td>8.4…150 Hz</td><td>4.9 m/s²</td><td>-</td></tr>
<tr><td>Shock resistance</td><td colspan="6">Conforming with IEC 61131-2, JIS B 3502
(Three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks))</td></tr>
<tr><td>Operating ambience</td><td colspan="6">No corrosive gases</td></tr>
<tr><td>Operating altitude</td><td colspan="6">≤ 2000 m *2</td></tr>
<tr><td>Installation location</td><td colspan="6">Inside a control panel</td></tr>
<tr><td>Overvoltage category *3</td><td colspan="6">≤ Ⅱ</td></tr>
<tr><td>Pollution degree *4</td><td colspan="6">≤ 2</td></tr>
</table>

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

*2: 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.

*3: 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.

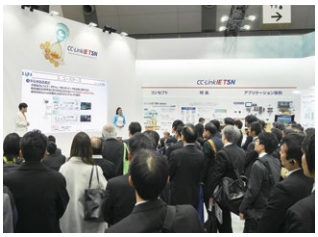
*4: This is an index showing the degree of the conductive pollution that can occur in the environment where the device is used.
In Pollution degree 2, only nonconductive pollution occurs.
Occasionally, however, temporary conductivity caused by condensation can be expected.

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

Proactively supporting CC-Link Family, 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. In 2018, CLPA has developed CC-Link IE TSN, the world's first open industrial network utilizes Time-Sensitive Networking (TSN) technology, which is an extension of standard Ethernet, to accelerate the construction of smart factories utilizing Industrial IoT (IIoT). 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 Family-compatible products. CLPA will provide a variety of development methods and develop a truly open industrial network on a global scale.

Seminar



Trade show

Conformance testing lab

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

CLPA website
www.cc-link.org/en

CLPA Headquarters
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Kita-ku, Nagoya 462-0825, JAPAN
TEL: +81-52-919-1588 FAX: +81-52-916-8655
e-mail: info@cc-link.org

Global influence of CC-Link Family continues to spread

Centered in Japan, the CLPA has established bases of operations in 10 regions around the world. We lead the way in further opening up CC-Link Family network technology to the world. From helping vendors develop compatible products to consultation concerning system construction for our users, we provide a wide range of support services.

Japan	● CLPA Headquarters CT	
Asia-Pacific	● CLPA-China CT ● CLPA-Korea CT	● CLPA-India ● CLPA-Taiwan
EMEA	● CLPA-Europe CT ● CLPA-Turkey	
Americas	● CLPA-Americas ● CLPA-Mexico	

CT : Conformance testing lab

Regional Offices ▶

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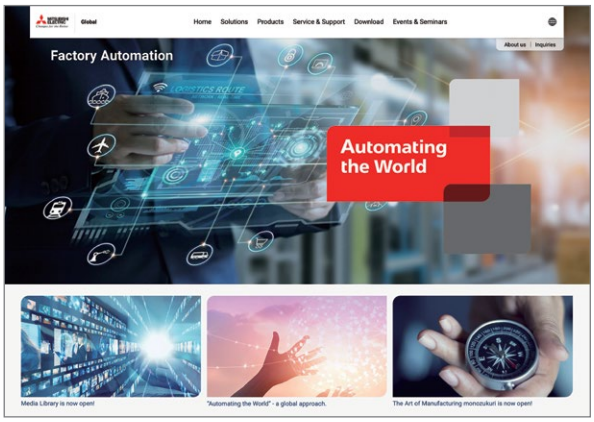
Factory Automation Global website

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

From here you can find:

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

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



Online e-learning

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

Beginner level

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

Basic to Advanced levels

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

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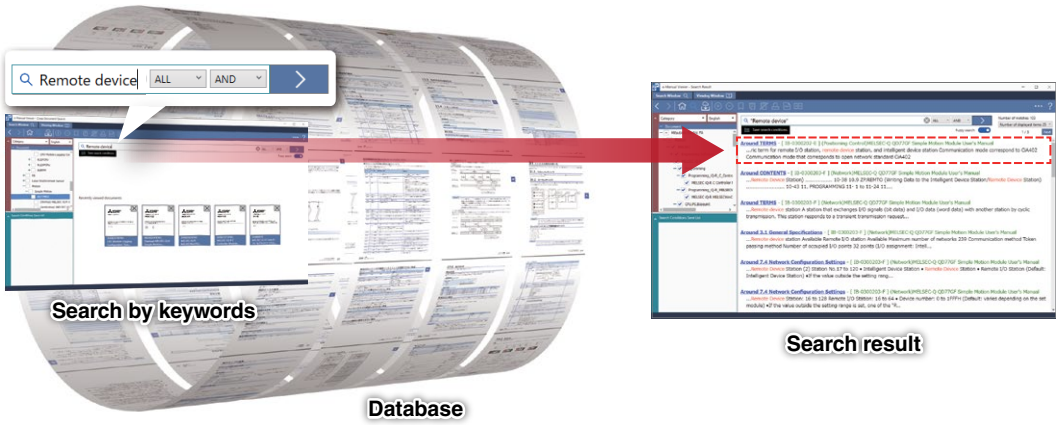
Innovative next-generation, e-Manual

e-Manual Viewer

The e-Manual viewer is a next-generation digital manual offered by Mitsubishi Electric that consolidates factory automation products manuals into an easy-to-use package with various useful features integrated into the viewer. The e-Manual allows multiple manuals to be cross-searched at once, further reducing time for setting up products and troubleshooting.



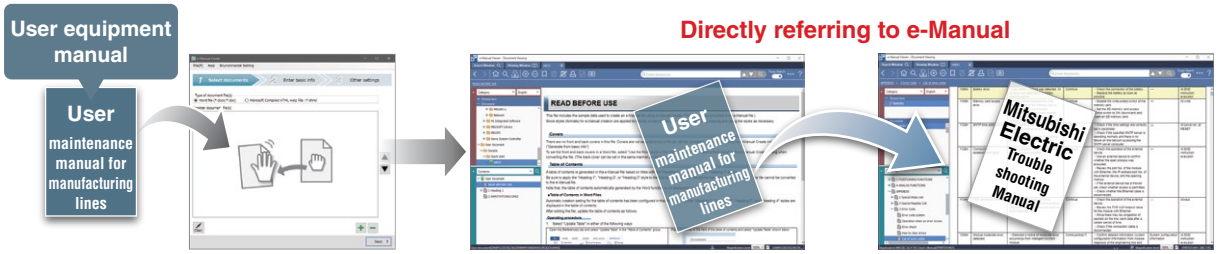
Key features included

- One-stop database containing all required manuals, with local file cache
- Included with GX Works3 engineering software
- Also available in tablet version
- Easily download manuals all at once
- Multiple users can share the latest manuals and knowhow with document sharing function
- Directly port sample programs within manuals to GX Works3
- Downloaded manuals are usable offline

Windows®-compliant

e-Manual Create

e-Manual Create is software for converting word files and chm files to e-Manual documents. e-Manual Create allows users to directly refer to Mitsubishi Electric e-Manuals from user's customized device maintenance manuals and such, supporting quick troubleshooting and reduction in document creation process.



Converting documents using e-Manual Create

e-Manual Viewer

Windows®-compliant

* To obtain the Windows® version of e-Manual Viewer and e-Manual Create, please contact your local Mitsubishi Electric sales office or representative.

CC-Link Related Product Model Names

Type		Model	Specifications	Protection level	CC-Link version*1
Master/local module		RJ61BT11	Master/local module for MELSEC iQ-R Series	-	2.00
		FX5-CCL-MS	Master Intelligent Module for MELSEC iQ-F Series	-	2.00
		QJ61BT11N	Master/local module for MELSEC-Q Series	-	2.00
		L26CPU-BT	CPU with master/local function for MELSEC-L Series, Output (sink)	-	2.00
		L26CPU-PBT	CPU with master/local function for MELSEC-L Series, Output (source)	-	2.00
		LJ61BT11	Master/local module for MELSEC-L Series	-	2.00
		FX3U-16CCL-M	Master block for MELSEC-FX Series (FX3G/FX3U/FX3GC/FX3UC)	-	2.00
Bridge module		NZ2GF-CCB	CC-Link IE Field Network-CC-Link bridge module	-	1.10
		NZ2AW1C2D2	CC-Link-AnyWire DB A20 bridge module	-	2.00
		NZ2AW1C2AL	CC-Link-AnyWireASLINK bridge module	-	2.00
Remote I/O module	Screw terminal block type	AJ65SBTB2N-8A	Input 8 points: 100…120 V AC 2-wire type Response time 20 ms	IP1X	1.10
		AJ65SBTB2N-16A	Input 16 points: 100…120 V AC 2-wire type Response time 20 ms	IP1X	1.10
		AJ65SBTB1-8D	Input 8 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB3-8D	Input 8 points: 24 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB1-16D	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB1-16D1	Input 16 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms	IP2X	1.10
		AJ65SBTB3-16D	Input 16 points: 24 V DC (positive/negative common shared) 3-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB3-16KD	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
		AJ65SBTB1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB1-32D1	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 0.2 ms	IP2X	1.10
		AJ65SBTB1-32D5	Input 32 points: 5 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
		AJ65SBTB1-32KD	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
		AJ65SBTB1-8T	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type	IP2X	1.10
		AJ65SBTB1-8T1	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB2-8T	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink) 2-wire type	IP2X	1.10
		AJ65SBTB2-8T1	Output 8 points: 12/24 V DC (0.5 A) Transistor output (sink) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type	IP2X	1.10
		AJ65SBTB1-16T1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB2-16T	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink) 2-wire type	IP2X	1.10
		AJ65SBTB2-16T1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (sink) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-32T	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type	IP2X	1.10
		AJ65SBTB1-32T1	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-8TE	Output 8 points: 12/24 V DC (0.1 A) Transistor output (source) 1-wire type	IP2X	1.10
		AJ65SBTB1-16TE	Output 16 points: 12/24 V DC (0.1 A) Transistor output (source) 1-wire type	IP2X	1.10
		AJ65SBTB1B-16TE1	Output 16 points: 12/24 V DC (0.5 A) Transistor output (source) 1-wire type	IP2X	1.10
		AJ65SBTB1-32TE1	Output 32 points: 12/24 V DC (0.5 A) Transistor output (source) 1-wire type	IP2X	1.10
		AJ65SBTB2N-8R	Output 8 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65SBTB2N-16R	Output 16 points: 24 V DC/240 V AC (2 A) Relay output 2-wire type	IP1X	1.10
		AJ65SBTB2N-8S	Output 8 points: 100…240 V AC (0.6 A) Triac output 2-wire type	IP1X	1.10
		AJ65SBTB2N-16S	Output 16 points: 100…240 V AC (0.6 A) Triac output 2-wire type	IP1X	1.10
		AJ65SBTB32-8DT	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) 2-wire type	IP2X	1.10
		AJ65SBTB32-8DT2	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) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-16DT	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) 1-wire type	IP2X	1.10
		AJ65SBTB1-16DT1	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) 1-wire type	IP2X	1.10
		AJ65SBTB1-16DT2	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) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-16DT3	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) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB32-16DT	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) 2-wire type	IP2X	1.10
		AJ65SBTB32-16DT2	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) 2-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-32DT	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) 1-wire type	IP2X	1.10
		AJ65SBTB1-32DT1	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) 1-wire type	IP2X	1.10
		AJ65SBTB1-32DT2	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) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-32DT3	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) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-32KDT2	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) 1-wire type Low-leakage current type	IP2X	1.10
		AJ65SBTB1-32DTE1	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) 1-wire type	IP2X	1.10
		AJ65SBTB32-16DR	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
		AJ65SBTB32-16KDR	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	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) 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) 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		AJ65ABTP3-16DE	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 (positive common) 3-wire type Response time 1.5 ms	IP1XB	1.10
			AJ65VBTS3-32D	Input 32 points: 24 V DC/5 mA (positive 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) 2-wire type	IP1XB	1.10
			AJ65VBTS2-32T	Output 32 points: 12/24 V DC (0.5 A) Transistor output (sink) 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) 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) 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) 2-wire type	IP1XB	1.10
			AJ65VBTCE2-16T	Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink) 2-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) 2-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) 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) 3-wire type	IP1XB	1.10
	One-touch connector type		AJ65VBTCU3-16D1	Input 16 points: 24 V DC (positive common) 3-wire type Response time 0.2 ms	IP1XB	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
			AJ65VBTCU2-16T	Output 16 points: 12/24 V DC (0.1 A) Transistor output (sink) 2-wire type	IP1XB	1.10
			AJ65SBTC1-32T1	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink) 1-wire type Low-leakage current 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) 4-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) 1-wire type Low-leakage current type	IP2X	1.10
			AJ65SBTCF1-32D	Input 32 points: 24 V DC (positive/negative common shared) 1-wire type Response time 1.5 ms	IP2X	1.10
	40-pin connector type		AJ65SBTCF1-32T	Output 32 points: 12/24 V DC (0.1 A) Transistor output (sink) 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) 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) 1-wire type	IP1XB	1.10
	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
			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) 2-wire type	IP67	1.10
Analog module	Screw terminal block type	Voltage/ current input	AJ65SBT-64AD	4-channel, voltage input: –10…10 V DC/–4000…4000 current input: 0…20 mA DC/0…4000	IP2X	1.10
			AJ65SBT2B-64AD	4-channel, voltage input: –10…10 V DC/–16000…16000 current input: 0…20 mA DC/0…16000	IP2X	1.10
		Temperature input	AJ65SBT2B-64TD AJ65SBT2B-64RD3	4-channel, Thermocouple (B, R, S, K, E, J, T, N) input 4-channel, 3-wire type RTD (Pt100, JPt100, Ni100) input	IP2X IP2X	1.10 1.10
		Voltage/ current output	AJ65SBT-62DA AJ65SBT2B-64DA	2-channel, voltage output: –4000…4000/–10…10 V DC current output: 0…4000/0…20 mA DC 4-channel, voltage output: –16000…16000/–10…10 V DC current output: 0…12000/0…20 mA DC	IP2X IP2X	1.10 1.10
	One-touch connector type	Voltage input	AJ65VBTCU-68ADVN	8-channel, voltage input: –10…10 V DC/–4000…4000	IP1XB	2.00
		Current input	AJ65VBTCU-68ADIN	8-channel, current input: 0…20 mA DC/0…4000	IP1XB	2.00
		Voltage output	AJ65VBTCU-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
RS-232 interface module			AJ65BT-R2N	RS-232 1-channel, with/ DC input 2 points, Transistor output 2 points	IP2X	1.10
WS Series interface module			FX3U-64CCL	Interface block for FX3G, FX3U, FX3GC, FX3UC Series	-	2.00
FX Series interface block			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		AJ65BTS-RPH	8-port star wiring hub module with repeater function, spring clamp terminal block type	IP2X	1.10
	Repeater module (T-branch)		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

* Positive common: sink, negative common: source

*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

Optional parts for I/O modules

■ One-touch connector plugs

Type	Model	Specifications			
		Cover color	Core wire size of applicable cable	Outer diameter of applicable cable	Maximum rated current
One-touch connector plug (20 pcs)	A6CON-P214 (33104-6000FL*1)	Transparent	0.14…0.2 mm² (26…24 AWG)	ø1.0…1.4 mm	2 A*2
	A6CON-P220 (33104-6100FL*1)	Yellow		ø1.4…2.0 mm	
	A6CON-P514 (33104-6200FL*1)	Red	0.3…0.5 mm² (22…20 AWG)	ø1.0…1.4 mm	3 A*2
	A6CON-P520 (33104-6300FL*1)	Blue		ø1.4…2.0 mm	
One-touch connector plug for communication (10 pcs)	A6CON-L5P (35505-6000-B0M GF*1)	Communication line: 0.5 mm², 20 AWG, Shielded cable: 0.5 mm², 20 AWG Applicable cable size (diameter): ø2.2…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 mm² (0.66…0.98 mm²), 18 AWG, 0.16 mm or larger for strand diameter, Insulating coating material PVC (heat resistant vinyl), Outer diameter of applicable cable: ø2.2…3.0 mm, Maximum rated current: 7 A*2			
	A6CON-PW5P-SOD (35505-6180-A00 GF*1)	Core wire size of applicable cable: 0.75 mm² (0.66…0.98 mm²), 18 AWG, 0.16 mm or larger for strand diameter, Insulating coating material PVC (heat resistant vinyl), Outer diameter of applicable cable: ø2.0…2.3 mm, Maximum rated current: 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)			

■ 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)

*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.

■ Protective cover for remote I/O module

Type	Model	Applicable module
Protective cover for 16-point module (10 pcs)	A6CVR-16	AJ65SBTB1-16D, AJ65SBTB1-16D1, AJ65SBTC1-32D, AJ65SBTC1-32D1, AJ65SBTB3-8D, AJ65SBTB2N-8A, AJ65SBTB1-16T, AJ65SBTB1-16T1, AJ65SBTB2-8T,AJ65SBTB1-16TE, AJ65SBTB2N-8R, AJ65SBTB2N-8S, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB32-8DT, AJ65SBT-RPG, AJ65SBT-RPS, AJ65SBTC4-16DE, AJ65SBTB2-8T1, AJ65SBTB1-16DT2, AJ65SBTC1-32DT3, AJ65SBTC4-16DT2, AJ65SBTB1-16DT3, AJ65SBTB32-8DT2
	A6CVR-VCE16	AJ65VBTCE3-16D, AJ65VBTCE2-16T, AJ65VBTCE32-16DT, AJ65VBTCE3-16DE
Protective cover for 32-point module (10 pcs)	A6CVR-32	AJ65SBTB1-32D, AJ65SBTB1-32D1, AJ65SBTB3-16D, AJ65SBTB2N-16A, AJ65SBTB1-32T, AJ65SBTB1-32T1, AJ65SBTB2-16T, AJ65SBTB2N-16R, 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

Type	Model	Specifications
40-pin 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)

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L(NA)08038E-P 2510(IP)

New publication, effective October 2025.