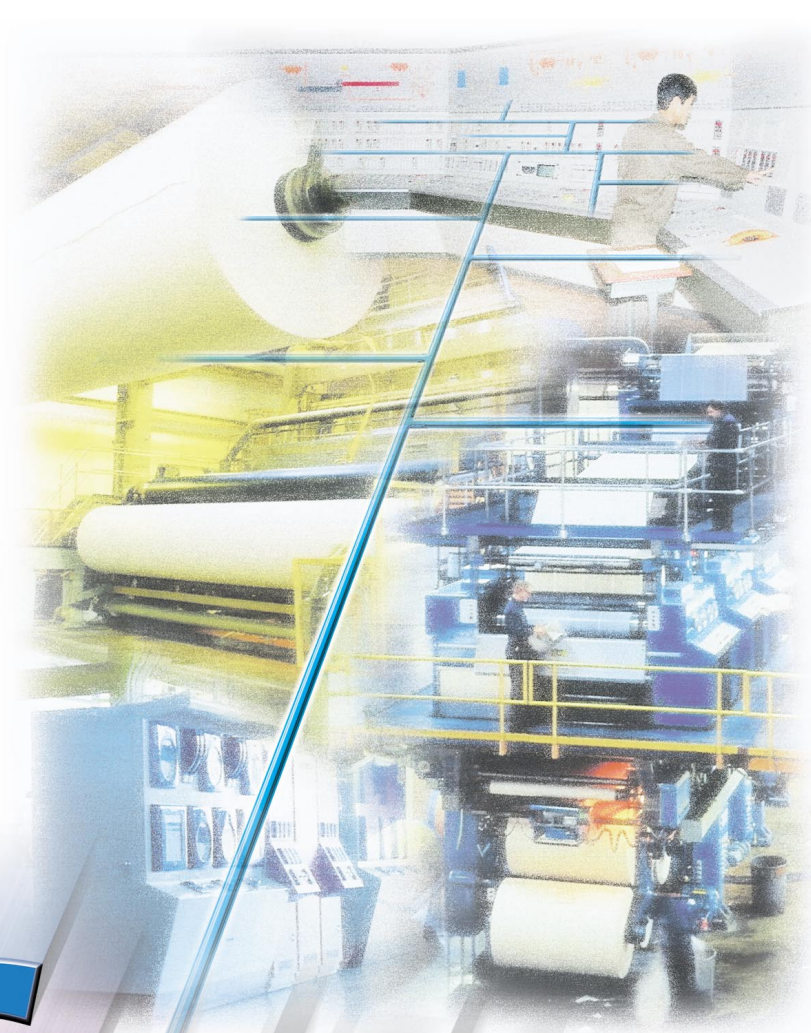


Network
Technology



**CC-Link -
Control &
Communi-
cation Link**

CC-Link

**The Power Network
for the I/O and Control Levels**





CC-Link delivers four key characteristics required by factory automation networks:

- **Simplicity**
- **Functionality**
- **Power**
- **Security** *CC-Link also supports Mitsubishi's entire family of automation components and a wide range of third-party components from over 100 partner companies.*

CC-Link – Leading Industrial Network Technology

Analysing network solution factors

The criteria for choosing a network solution are complex and exacting. Key factors include speed, topology, ranges, redundancy, data transfer rates, number of stations, determinism, costs, simple operation, diagnostics and the ability to integrate third-party products, to name but a few. However, the decisive question is always, does this network delivery the functionality I need for my specific application? We have taken all these criteria into account in the development of our network products, and we can assure our users that every network solution delivers all the required functionality, without ifs and buts.

CC-Link makes the decision easy

CC-Link is a powerful, deterministic control and I/O network that gives you the best of both worlds: Seamless integration of a single-supplier solution plus the flexibility provided by the ability to use third-party components.

The technology advantage of CC-Link

With its bus data communications architecture CC-Link is a powerful deterministic I/O network with all the functionality of a control level network. CC-Link also shines when it comes to throughput and data capacity – transfer rates of up to 10 Mbps, up to 2,048 I/O points and 512 K data words are specifications that speak for themselves.



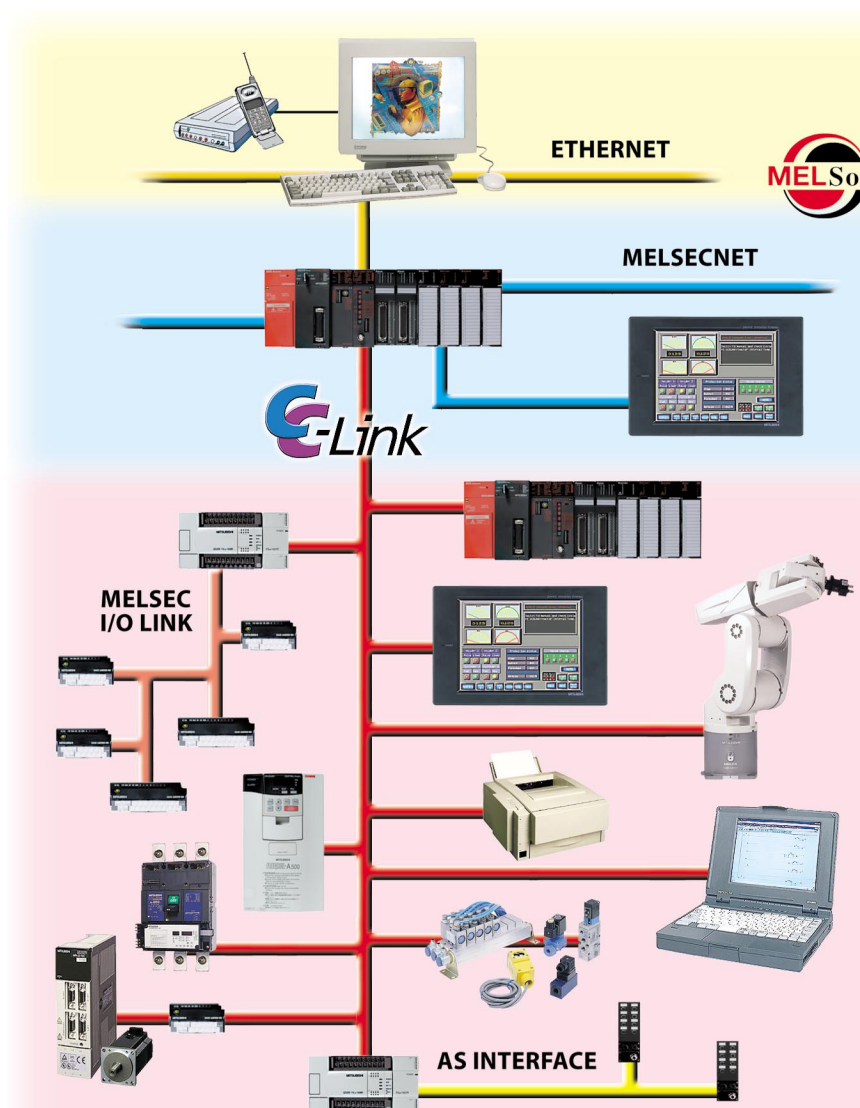
Simplicity

As part of a complete solution from a single supplier CC-Link is very easy to connect and integrate with both other Mitsubishi Factory Automation products and third-party components. And you can configure the network without additional software.



Functionality

CC-Link guarantees the functionality of all system components. No matter whether you use Mitsubishi or third-party products, CC-Link gives you the assurance of maximum reliability and functionality.



Outstanding features for optimum performance



Power

CC-Link is a very powerful network, delivering impressive data transfer rates of up to 10 Mbps on low-cost, shielded twisted-pair lines, plus remote diagnostics and monitoring features for the entire network.



Security

Extensive diagnostics functions, online module replacement, slave stations with shutdown capability, standby master function, etc. – together, all these functions guarantee a very high level of security for trouble-free execution of your applications.

User-focused network solutions

Mitsubishi delivers an entire range of network structures covering everything from the highest to the lowest levels of network architecture, and from open, non-proprietary networks to seamlessly integrated internal networks, enabling every user to choose exactly the right solution for their specific needs.

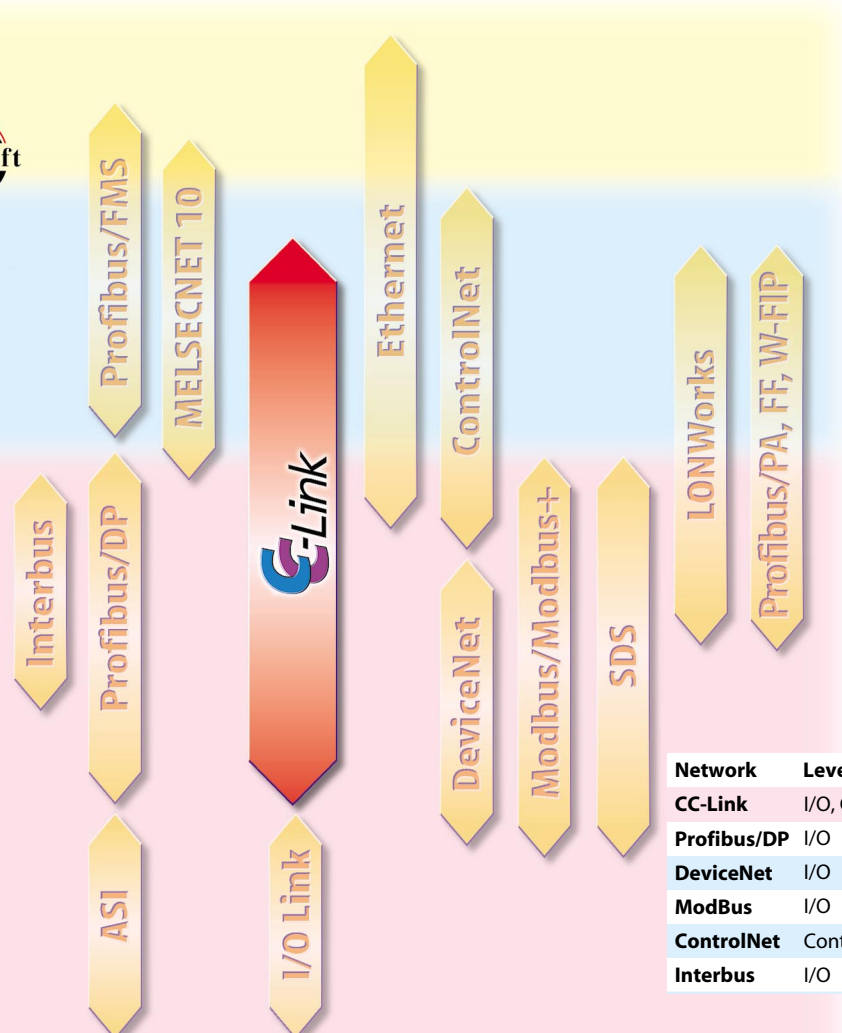
All Mitsubishi networks deliver maximum performance for their wide-ranging application specifications. Bus speed as the key to reliable data acquisition is just one factor among many that makes it easy to opt for a Mitsubishi network: Others include trouble-free connection options, seamless integration and comprehensive performance. No matter whether you need to network a complete production level or just an individual process, Mitsubishi's full range of network options always provide the ideal solution for your application.



The efficient implementation of Mitsubishi's new CC-Link network enables optimisation of your entire plant operation:

- **Significantly faster system throughput times**
- **Drastic reduction of the time required for installation and configuration**
- **Reduction of troubleshooting and maintenance overheads to an absolute minimum**
- **Maximum security for optimum performance**
- **Replace modules during operation, without stopping the system**

A simple comparison of the performance specs of the various network types highlights the high technical standards of CC-Link.



Network	Level	Medium	Baud Rate	Stations	Range
CC-Link	I/O, Control	Twisted pair	10 Mbps	64	1,200 m
Profibus/DP	I/O	Twisted pair	12 Mbps	60	4,800 m
DeviceNet	I/O	Twisted pair	0.5 Mbps	64	500 m
ModBus	I/O	RS485	0.0192 Mbps	32	500 m
ControlNet	Control	Coax or fibre-opt.	5 Mbps	99	1,000 m
Interbus	I/O	Twisted pair	0.5 Mbps	256	400 m



Mitsubishi's new network for the I/O and control levels

Users of Mitsubishi's CC-Link network also get the following additional functions:

- Program monitoring with control units
- Remote programming from PC terminals
- Automatic restart of replaced modules
- Slave station shutdown capability
- Stand-by master functionality
- Up to 64 stations per master
- Integration of up to 24 PLC systems
- Deployment of multiple masters to increase capacity
- High data throughput rates
- Bus architecture
- Flexible configuration options
- Economical twisted pair media
- Simple installation and maintenance
- Network coverage up to 1,200 m
- Online module replacement, i.e. replacement of defective modules without shutting down the system
- Simple data processing
- Automatic information updates for intelligent data processing modules like drives and control units
- Comprehensive diagnostics
- Comfortable additional functions

CC-Link Time Criteria

Transfer rates in relation to distance

Transfer Rate	Range (up to 12 km with repeaters)
156 bps	1,200 m
625 bps	600 m
2.5 Mbps	200 m
5 Mbps	110-150 m
10 Mbps	50-100 m

Data Throughput

Station Type	Link-Scan Time at 10 Mbp
Remote stations only	3.9 ms/64 stations
Analog I/O stations only	3.0 ms/42 stations
Intelligent stations only	3.7 ms/26 stations

Available Products for CC-Link:

PLCs

Master modules for AnS/QnAS, AnU/QnA;
Slave modules for FX0N, FX2N

I/O Modules

Digital I/O modules,
Analog I/O modules

Special Function Modules

Thermocouple modules,
high-speed counter modules
positioning modules,
RS232 interface module

Control Units

A900GOT series,
MAC E900/910

Robots

MOVEMASTER RV-A
and RP series

Circuit Breakers

ACB, MCCB

Other Products

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over 100 partner companies
worldwide.

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