



English
version



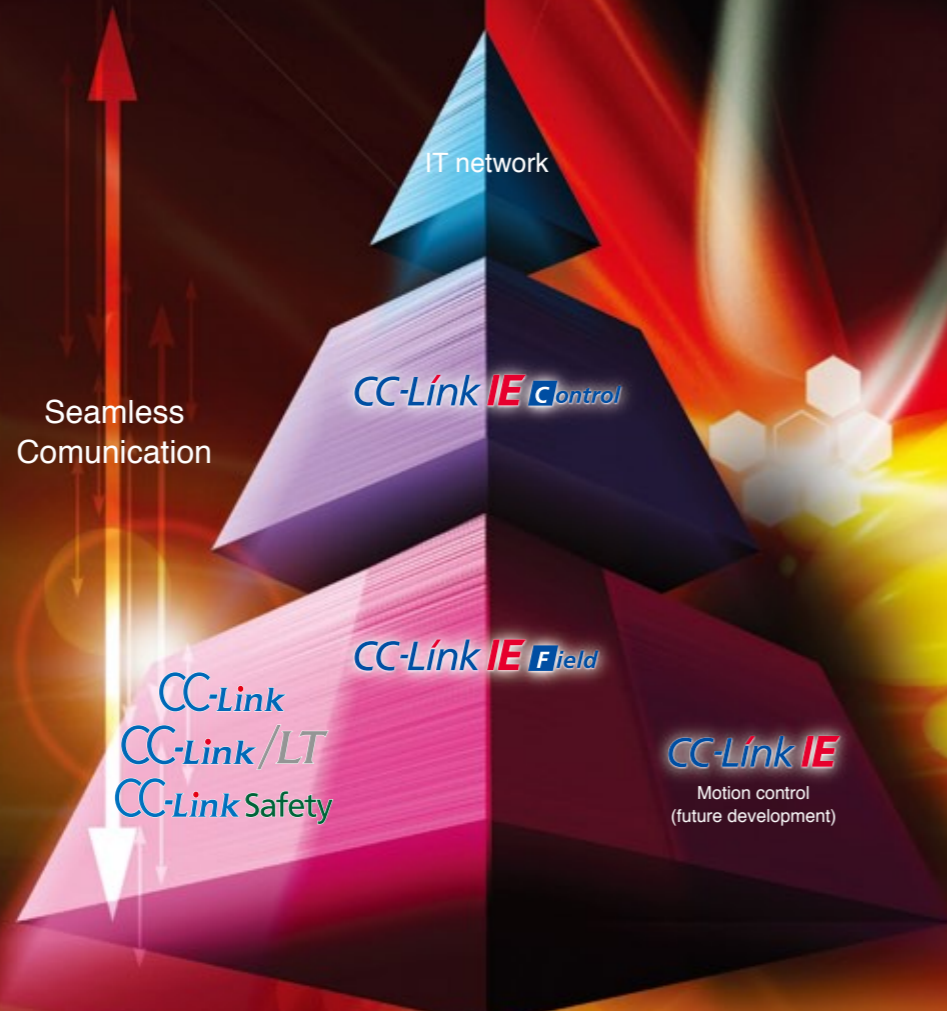
- Japan
- Korea
- Taiwan
- Americas
- Europe
- China
- ASEAN

The new field network has arrived
Accelerating the design of the
CLPA's integrated network!

CC-Link IE
CC-Link IE

Ethernet based Integrated Network
CC-Link IE

CC-Link IE makes integration of FA system
open and seamless



CC-Link IE

A new Industrial Ethernet built on established technology

The CC-Link Partner Association has expanded the CC-Link IE Industrial Ethernet to provide real-time control and information from top floor to shop floor.

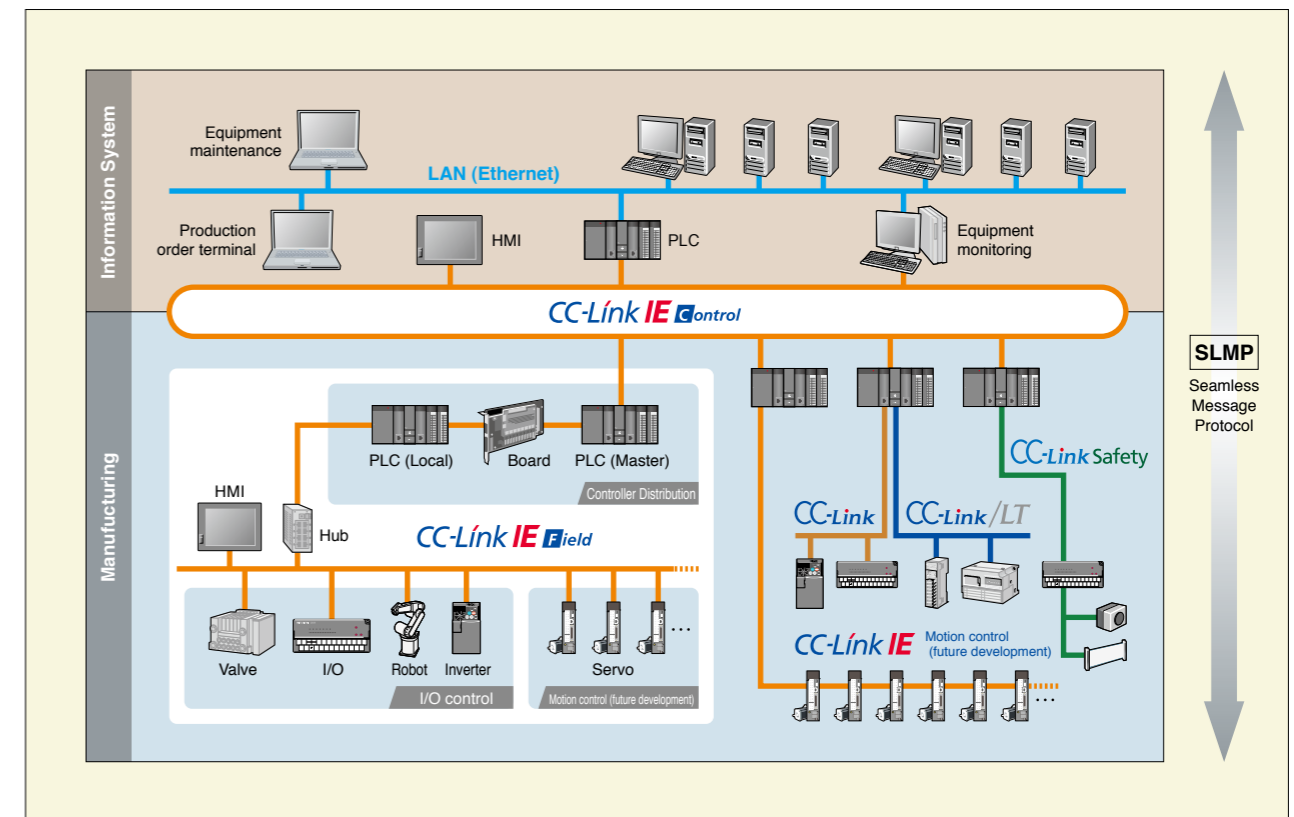
Each new day brings greater expectation in regard to CC-Link IE and its potential as the next-generation, Ethernet-based integrated network. The established 1 Gbps controller level network has now been extended to bring the same levels of performance to a field network. The CC-Link IE open Industrial Ethernet makes seamless data transmission possible in areas ranging from information systems to the production field, and will completely transform the understanding of an "industrial network."

Features

Optimal network choice for complete manufacturing control up to the business information system level.

CC-Link IE is a vertically integrated and Ethernet-based network from IT layer to field layer.

Ultra high speed & ultra large capacity network with real-time performance



CC-Link IE Control

The Industrial Ethernet network that realizes high reliability by duplexing the transmission path. The core network that bundles each field or motion network and provides controller-level distributed control with Gigabit speed large data capacity.

CC-Link CC-Link/LT CC-Link Safety

CC-Link is the existing fieldbus network for typical field control applications. CC-Link/LT is a cost saving network for small I/O applications. CC-Link Safety is specialized for use to meet demanding safety network requirements.

CC-Link IE Field NEW

The new Industrial Ethernet field network for intelligent manufacturing systems. Provides real-time integrated distributed control of I/O while also linking numerous networks at Gigabit speed.

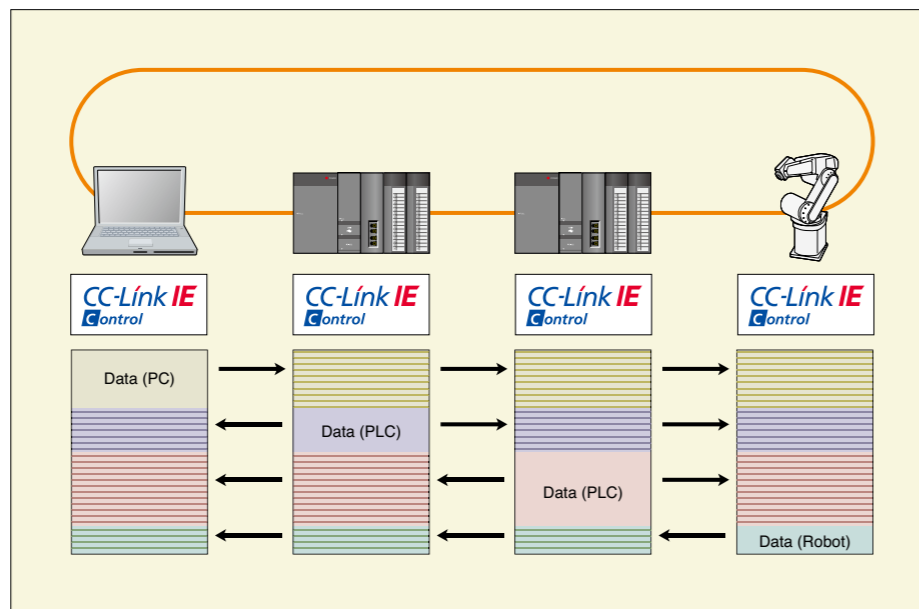
CC-Link IE Control

A new, in-factory backbone network, utilizing Gigabit Ethernet technology.

CC-Link IE is designed to ensure a highly reliable network through the use of full duplex fiber optic transmission paths, delivering high-speed, large-capacity distributed control. It's the new backbone network that provides assured control of each field network.

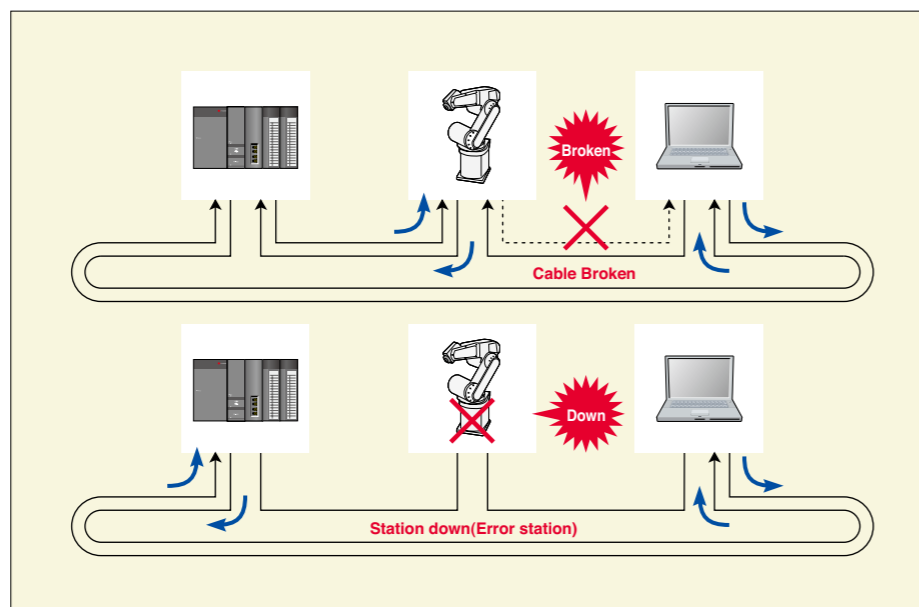
Network shared memory for cyclic communication with ultra high speed & ultra large capacity

- To achieve stable communication independent of transmission delay CC-Link IE adopts a token passing protocol for data transmission control.
- Each controller passes data to the network shared memory only when it has the token, ensuring fully deterministic and high speed real-time communication.



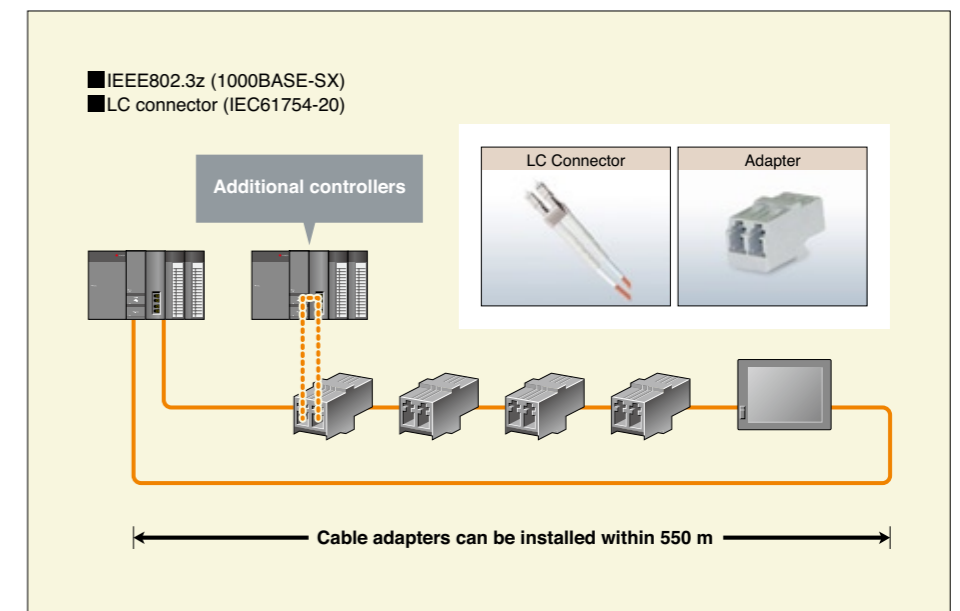
High speed & reliability by redundant fiber optic loop technology

- By adoption of redundant loop topology, each station continues communication by looping back upon detection of a broken cable or station error.
- This integrated redundancy is provided without additional equipment and without increasing network cost.



Adoption of Ethernet technology

- Easy and world-wide purchasing of standard Ethernet cabling parts by using Ethernet technology.
- By using cable adapters, wiring debugging and installation can be started even if all the equipment in the line has not been fully installed.



CC-Link IE Controller network Specifications

Basic communication function	Network shared memory communication (Cyclic communication: real time communication) Message communication (Transient communication: non real time communication)
Communication speed / data link control	1Gbps / based on Ethernet standard
Network topology	Loop
Data transmission reliability method	Double loop
Data transmission control method	Token passing
Size of network shared memory	MAX. 256Kbytes
Communication medium	IEEE 802.3z multimode optical fiber cable (G1)
Connector	IEC 61754-20 LC connector (duplex connector)
Maximum Number of stations	120 stations
Station-to-station distance (When multi mode optical fiber is used)	MAX. 550 m
Overall distance (When multi mode optical fiber is used)	MAX. 66,000 m

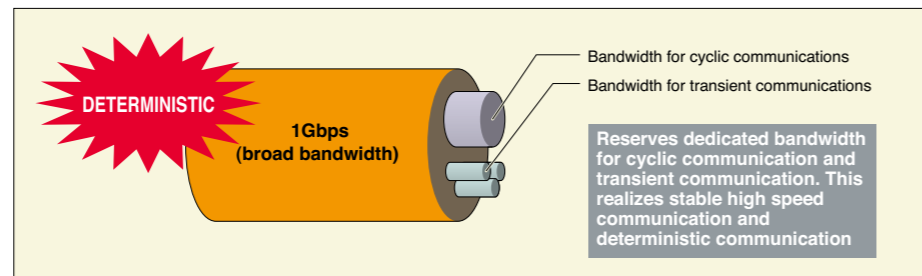
CC-Link IE Field

Ultra-high-speed ... supremely useable ... seamless ... and fully compatible with the Ethernet standards
We're bringing the benefits of "Gigabit & Ethernet" to the field level!

CC-Link IE Field is ultra high speed & ultra large capacity network, which provides both deterministic (cyclic) communication and on-demand messaging (transient) communication. And it makes integration possible among controller distributed control, I/O control and motion control (future plan). Safety network will be integrated with CC-Link IE Field.

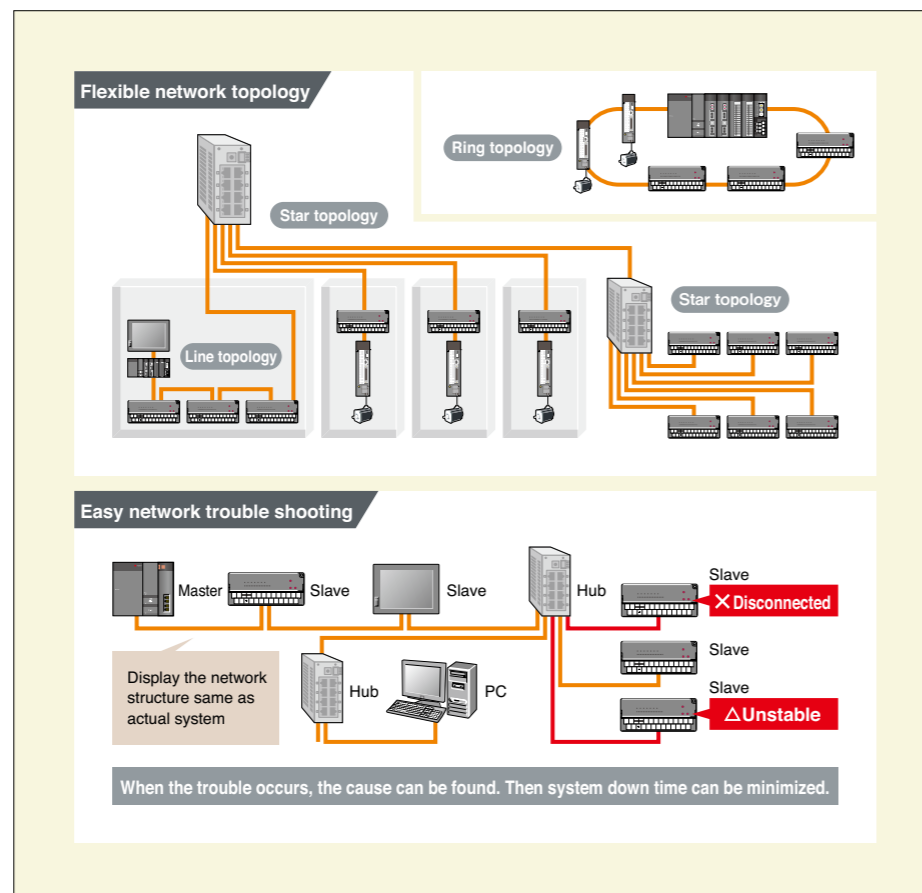
Ultra High Speed

- ◎ Gigabit transmission and real-time protocol enables easy and reliable data communication and remote I/O communication independent of transmission delay.
- ◎ High-speed communication for the management information of the devices and trace information as well as the transmission of control data.



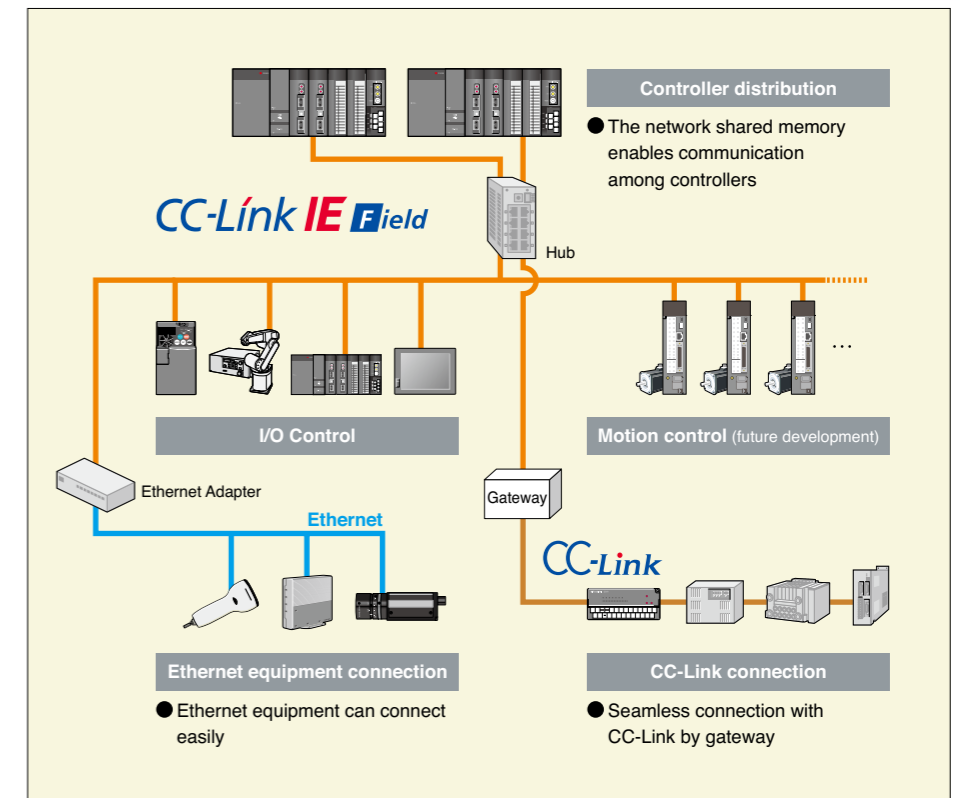
Easy Networking

- ◎ Flexible network topology (ring, line and star are all possible)
- ◎ The network shared memory allows communication among controllers and field devices.
- ◎ Easy configuration and network diagnosis enables a total engineering cost reduction from system start-up to maintenance.



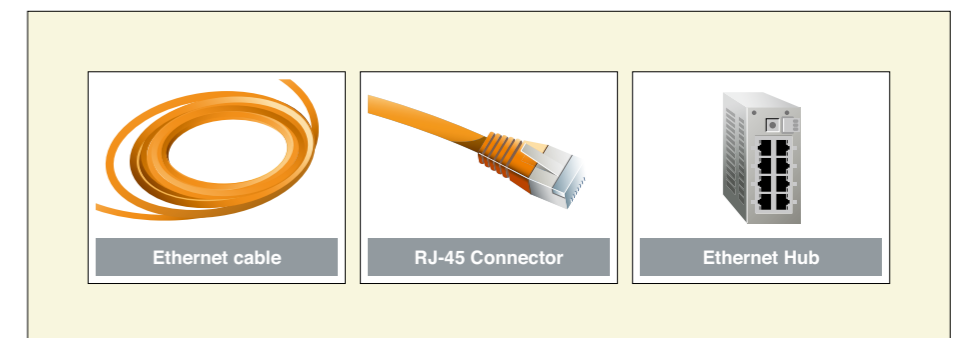
Seamless Networking

- ◎ CC-Link IE Field can access field devices directly by remote engineering tools, across the network hierarchy.
- ◎ Devices can be monitored or configured from anywhere in the network, which increases the engineering efficiency with remote management.



Ethernet Cable and Connector

- ◎ Since the physical layer and data link of CC-Link IE Field Network apply Ethernet technology, commercial Ethernet cables, adapters and hubs can be used.
- ◎ The availability of materials and selectivity of equipment for the network installation and adjustment are enhanced.



CC-Link IE Field Network Specification

Item	Specifications	Remarks
Communication speed / data link control	1 Gbps / Ethernet standard	—
Communication medium	Metal cable	Shielded, RJ-45
Data transmission control method	Token passing	—
Network topology	Star, Line (Star and Line can be mixed), Ring	Hubs can be used



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