

# Twelve good reasons for using CC-Link

## 1. High noise immunity.

CC-Link has a very high tolerance to electro-magnetic noise compared to other fieldbuses, and users do not need to worry about earthing problems or using special EMI connectors when installing. Uniquely, it is part of the CC-Link Conformance test

## 2. Floating master function:

Even if a fault occurs on the network master station, the standby master will automatically maintain network communications. Up to 26 standby masters are permitted per network, with each standby master being able to have completely different operating programmes if needed so suit failure situations.

## 3. Detaching slave function

This automatically removes a slave station that has a fault or for maintenance and allows communication with all other stations to continue without affecting network reaction times. This feature is fairly unique to CC-Link, and allows for the creation of truly flexible production line configurations.

## 4. Automatic return function

This feature allows all network devices to be replaced while the network is operating and automatically returns a disconnected station to the data link when a fault is corrected, without need to reset the network. This feature overcomes the need for network resetting on instances such as local power failures or safety switch activations that remove power to the local network stations on the machine.

## 5. Hot swap of stations (masters and slaves).

On CC-Link you can hot swap stations without any effect on the network cycle times and without creating errors. Reconnection can also be on-line without stopping the network. This feature is a production downtime saving feature as there is no need to stop the network for station repairs.

## 6. Station bypass.

Stations can be selected as bypassed without effect on cycle time for flexible production lines and easy maintenance. This feature is also useful when creating a future proof network topology as it allows the setup for the network to be created in the Master but the actual hardware stations to be added on gradually or at a later date. These stations can be activated without stopping or resetting the network, saving lost production or additional software writing and commissioning time.

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### **7. Response time.**

People confuse the actual speed of the network with its refresh or response time. CC-Link has a network speed of up to 10Mbps but, what is more important, is it can refresh all data (4096 words and 8192 bits) in all 65 stations in 3.9 milli-seconds giving a very fast response time not only for Data transmission but also for physical digital field reaction times, which are needed in high speed production lines such as pharmaceutical and packaging machines.

### **8. Determinism.**

All the CC-Link network family were designed from the beginning to be truly deterministic with guaranteed response times. Determinism guarantees that data sent and received on the network is acted on by the connected devices within a stated period of time and is not corrupted in any way. This determinism is very important on Quality Assurance data and time stamping applications where guaranteed response is laid down in the specifications.

### **9. No configuration files.**

Unlike many other networks, CC-Link needs no special configuration files when configuring the network. Unlike other networks which need to user to create or use complex and restricting configuration files, CC-Link has an open data table format which makes connecting to any device extremely fast and flexible. If the user does wish to use a fixed data format for connecting devices (such as Variable Speed Drives) there are data areas specified in the CC-Link data table and protocol that can be optionally used for common actions such as Start Forward, Reverse and set speeds etc. if required.

### **10. High Speed**

CC-Link has a speed of 10Mbps. This high speed network and its fast reaction time allow it to be used even in high speed production applications.

### **11. Large network capacity**

CC-Link can connect onto 64 stations, with up to 1200m using copper connection or up to 13.2km if using fibre optic repeaters. Using special "T" branch modules it is possible to create T branch connections on the standard bus topology, making actual network installation easier.

### **12. Wide choice of compatible products and suppliers**

CC-Link has over 1000 compatible certified products from 300 suppliers ranging from PLCs, process control equipment to building management devices. This wide variety of connectable products means that the user can select best in class products for all installed devices and with all certified CC-Link products be confident that the system will be absolutely reliable with maximum availability off any field bus network .