

CC-Link Connector Guide

Revision History

Revision No	Description	Date
*	Original	09/2002
1.00	Created using the CC-Link Installation guide V1.30.	11/18/2004
1.10	Updated using the CC-Link Installation guide V1.40.	09/15/2005

Chapter 1: Introduction	2
1.1 Definitions and Terminology	2
Chapter 2: CC-Link Connector information	4
2.1 Connector	4

Chapter 1: Introduction

1.1 Definitions and Terminology

Station

A device that is connected via the *CC-Link* network to which any of station numbers 0 to 64 can be assigned.

Master Station

A device that controls the entire network and has the control information and parameters for each Slave Station. One Master Station is required in each network. The Master Station Number is fixed at zero (0).

Slave Station

A designation for a generic non–Master Station. Valid station numbers are 1 – 64.

Local Station

A *CC-Link* network station that can perform cyclic and transient communications with the Master Station and other Local Stations.

Standby Master Station

A station that replaces the Master Station to continue the data link in case the original Master Station stops functioning. A Standby Master Station has the same functions as those of the Master Station and functions as a Local Station under normal conditions.

Intelligent Device Station

A station with the capability to communicate to a Master Station using both cyclic and transient transmissions.

Remote Station

A designation for a Remote I/O Station and/or Remote Device Station.

Remote Device Station

A station that can use bit data and word data.

Remote I/O Station

A station that can only use bit data.

Cable

Use *CC-Link* approved and conformance tested cable (Shielded, 3-core twisted pair cable).



Terminating Resistor

Terminating resistors are attached at both ends of the network. The resistor reduces reflected wave at terminating point and prevents disturbance of signal.

Connection Method

The basic connection for *CC-Link* is a multi drop connection. A T-branch connection is allowed in network speeds of 625Kbps or less. A branch connection topology is allowed for all network speeds when a repeater is used in the branch connection design.

Trunk Line

The main cable running between the terminating resistors and connecting devices, this main cable does not including any branch lines. The length of the trunk line is length of that cable running between the terminating resistors, not including any branch lines.

Branch Line

The cable branched off from the trunk line. The length of a branch line is the length of the individual cable branched off from the trunk line. The Total Branch Line Length is the total of all the individual branch line lengths combined. A branch line may be a T-Branch connection which is a simple wired connection to split off the main trunk line. A branch line may also be a powered connection using a repeater.

Maximum Transmission Distance

Maximum transmission distance refers to the total cable length from edge to edge including any multi-dropped connection(s). The maximum transmission distance depends on communication speed and the type of *CC-Link* cable used.

Station-to-Station Cable Length

Station-to-station cable length refers to the length of cable between one station and another station. The station-to-station cable length depends on station type, *CC-Link* Version and type of *CC-Link* cable.

Chapter 2: CC-Link Connector information

2.1 Connector

Connector specifications for use between *CC-Link* cables are as follows. Note any of these can be used for connection from control panel to outside.

	M12 (Micro) type	<u>Contact</u>
Resistance of conductor	$\leq 5m \Omega$	CLPA ¹ Pin position
Thickness of Gold plate	$\geq 0.1 \mu m$	
Type of water proof	IP67 (JIS C 0920)	
Pin position	Pin 1: SLD Pin 2: DB (White) Pin 3: DG (Yellow) Pin 4: DA (Blue)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Female</p> </div> <div style="text-align: center;"> <p>Male</p> </div> </div>

Table 2.1 Specification of M12 (Micro) types (4 conductor)

	M12 (Mini) type	<u>Contact</u>
Resistance of conductor	$\leq 5m \Omega$	CLPA ¹ Pin position
Thickness of Gold plate	$\geq 0.1 \mu m$	
Type of water proof	IP67 (JIS C 0920)	
Pin position	Pin 1: SLD Pin 2: DB (White) Pin 3: DG (Yellow) Pin 4: DA (Blue)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Female</p> </div> <div style="text-align: center;"> <p>Male</p> </div> </div>
Pin position	Pin 1: DA (Blue) Pin 2: DB (White) Pin 3: DG (Yellow) Pin 4: 24 VDC Pin 5: 24 GND Pin 6: SLD	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Female</p> </div> <div style="text-align: center;"> <p>Male</p> </div> </div>

Table 2.2 Specification of M12 (Mini) types (4 conductor & 6 conductor)

¹ Contact partner vendor as described in *CC-Link* products catalog published by CLPA or on the CLPA web site (<http://www.cclinkamerica.org>).

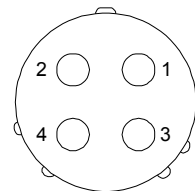
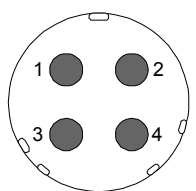
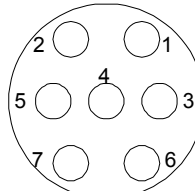
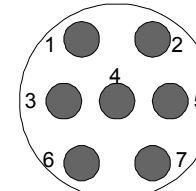
	Connector type	<u>Contact</u>	
Contact resistance	$\leq 5\text{m } \Omega$	CLPA ¹	
Thickness of gold plate	$\geq 0.5 \mu\text{m}$		
Type of Water proof	IP67 (JIS C 0920)		
Conductors	Pin position		
4 conductors	Pin 1: DA (Blue) Pin 2: DB (White) Pin 3: DG (Yellow) Pin 4: SLD	Female	Male
			
7 conductors (with power conductor)	Pin 1: DA (Blue) Pin 2: DB (White) Pin 3: DG (Yellow) Pin 4: N.C. Pin 5: +24V Pin 6: 24G Pin 7: SLD	Female	Male
			

Table 2.3 Waterproof Connector type (4 conductor, 7 conductor)

Connector type		Contact
Contact resistance	$\leq 5\text{m } \Omega$	CLPA ¹
Thickness of gold plate	$\geq 0.5 \mu\text{m}$	
Conductors	Pin position	
4 conductors	Pin 1: N.C. Pin 2: N.C. Pin 3: DA (Blue) Pin 4: DG (Yellow) Pin 5: N.C. Pin 6: N.C. Pin 7: N.C. Pin 8: DB (White) Pin 9: N.C.	Female
	Note: connect shield to metal outer shell of 9-Pin D-Shell	Male
6 conductors (with power conductor)	Pin 1: +24V Pin 2: N.C. Pin 3: DA (Blue) Pin 4: DG (Yellow) Pin 5: N.C. Pin 6: 24G Pin 7: N.C. Pin 8: DB (White) Pin 9: N.C.	Female
	Note: connect shield to metal outer shell of 9-Pin D-Shell	Male

Table 2.4 9-Pin D-Shell Connector type



Revision 1.10

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