**1.2 Overview**

The CC-Link master block FXn-16CCL-M is a special extension block which assigns an FX Series PLC as the master station of the CC-Link system.

1) Remote I/O stations and remote device stations can be connected to the master station (FX Series PLC).

- **Master station**: Station which controls the data link system
- **Remote I/O station**: Remote station which handles only bit information
- **Remote device station**: Remote station which handles both bit information and word information

2) By using the CC-Link interface block FXn-32CCL, two or more FX Series PLCs can be connected as remote device stations to configure a simple distributed system.

**1.3 Dimensions and Setting**

Dimensions: mm (inches)  
MASS (Weight): 0.4 kg (0.88 lbs)
1.2 Overview
The CC-Link master block FX2N-16CCL-M is a special extension block which assigns an FX Series PLC as the master station of the CC-Link system.
1) Remote I/O stations and remote device stations can be connected to the master station (FX Series PLC).
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2) By using the CC-Link interface block FX2N-32CCL, two or more FX Series PLCs can be connected as remote device stations to configure a simple distributed system.

1.3 Dimensions and Setting
Dimensions: mm (inches) MASS (Weight): 0.4 kg (0.88 lbs)

<table>
<thead>
<tr>
<th>Number Setting contents</th>
<th>0</th>
<th>156 kbps</th>
<th>625 kbps</th>
<th>2.5 M</th>
<th>5 M</th>
<th>10 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>156 kbps</td>
<td>625 kbps</td>
<td>2.5 M</td>
<td>5 M</td>
<td>10 M</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>625 kbps</td>
<td>2.5 M</td>
<td>5 M</td>
<td>10 M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.5 M</td>
<td>5 M</td>
<td>10 M</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>5 M</td>
<td>10 M</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10 M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Condition setting switch
Number Setting description Switch status
0 | BWI to SW3 (Unusable) | Always OFF |
1 | SW4 Input data status in data link faulty station | Keep (H/LD) Clear (CLR) |
2 | BWI to SW4 (Unusable) | Always OFF |

9) Terminal block
Connects the power supply to operate the master block. M3 Screw

10) Extension cable
Connects the PLC.

11) Fast extension connector
Connects extension equipment.

12) DIN rail mounting groove
DIN46277: DIN rail mounting groove of 35 mm (1.38") in width
1.2 Overview
The CC-Link master block FX2n-16CCL-M is a special extension block which assigns an FX Series PLC as the master station of the CC-Link system.

1) Remote I/O stations and remote device stations can be connected to the master station (FX Series PLC).
   - Master station: Station which controls the data link system
   - Remote I/O station: Remote station which handles only bit information
   - Remote device station: Remote station which handles bit information and word information

2) By using the CC-Link interface block FX2n-32CCL, two or more FX Series PLCs can be connected as remote device stations to configure a simple distributed system.

1.3 Dimensions and Setting
Dimensions: mm (inches) MASS (Weight): 0.4 kg (0.88 lbs)

1.4 Transmission speed setting switch
5) Mode setting
Sets the operation status of the module. (Default setting at shipment: 0)
   - 0: Online
   - 1: Offline

6) Transmission speed setting switch
Sets the transmission speed of the module. (Default setting at shipment: 0)
   - B RATE
     - 0 to A: 1 Mbps
     - B to F: 2 Mbps
     - G to J: 5 Mbps

7) Condition setting switch
Sets the condition of the module. (Default setting at shipment: All OFF)
   - BW1 to BW3
     - BW1: Always Off
     - BW2: Input data status in data link faulty station
     - BW3: Always Off

1.5 Mode setting switch
Sets the station number of the module. (Default setting at shipment: 00)

1.6 Terminal block
Connects dedicated CC-Link cables to enable data links. For the connection method, refer to Section 2.3.
  - BW1 to BW3: Indispensable
  - BW2: Connects dedicated CC-Link cables to enable data link for the connection method. Refer to Section 2.3.
**2. Installation and wiring**

**INSTALLATION PRECAUTIONS**
- Use the module in the environment described in the USER'S MANUAL. General Specification. Do not use the PLC in places with dust, soot, conductive dust, corrosive gas or combustible gas, places exposed to high temperature, condensation, wind or salt spray. Class D (wet atmosphere) or Class E (dust).
- When drilling screw holes or performing wiring, make sure that cutting and wiring debris or other foreign material do not enter the ventilation slits of the module.
- Some modules may cause fire, failure or malfunction.

**WIRING PRECAUTIONS**
- Before beginning any installation or wiring work, make sure all phases of the system have been shut off.
- Use dedicated CC-Link cables. If any other cable is used, the performance of the CC-Link system cannot be guaranteed.
- Use the module in the environment described in the USER'S MANUAL. General Specification. Do not use the PLC in places with dust, soot, conductive dust, corrosive gas or combustible gas, places exposed to high temperature, condensation, wind or salt spray. Class D (wet atmosphere) or Class E (dust).

**3. SPECIFICATION**

### 3.1 Power Supply Specification

- **DC external power supply**
  - Supplied from a 24 V DC (150 mA) external terminal block.
- **DC internal power supply**
  - 5 V DC (is not used).
  - 5 V DC (is converted from 24 V DC external power supply).

### 3.2 General Specification

- **Dedicated CC-Link Cables**
  - Use dedicated CC-Link cables in the CC-Link system. If any other cable is used, the performance of the CC-Link system cannot be guaranteed.

**3.3 Performance Specification**

- Use only one type of cable (dedicated CC-Link cables OR dedicated CC-Link high-performance cables).
- If both types of cables are used together, normal data transmission cannot be guaranteed.

**INSTALLATION PRECAUTIONS**

- **Before beginning any installation or wiring work, make sure all phases of the system have been shut off.**
- **Use dedicated CC-Link cables.** If any other cable is used, the performance of the CC-Link system cannot be guaranteed.
- **Use the module in the environment described in the USER'S MANUAL. General Specification.** Do not use the PLC in places with dust, soot, conductive dust, corrosive gas or combustible gas, places exposed to high temperature, condensation, wind or salt spray. Class D (wet atmosphere) or Class E (dust).

**WIRING PRECAUTIONS**

- **Before beginning any installation or wiring work, make sure all phases of the system have been shut off.**
- **Use dedicated CC-Link cables.** If any other cable is used, the performance of the CC-Link system cannot be guaranteed.
- **Use the module in the environment described in the USER'S MANUAL. General Specification.** Do not use the PLC in places with dust, soot, conductive dust, corrosive gas or combustible gas, places exposed to high temperature, condensation, wind or salt spray. Class D (wet atmosphere) or Class E (dust).

**3.1 Power Supply Specification**

- **DC external power supply**
  - Supplied from a 24 V DC (150 mA) external terminal block.
- **DC internal power supply**
  - 5 V DC (is not used).
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2. Installation and wiring

INSTALLATION PRECAUTIONS
- Use the module in the environment described in the USER'S MANUAL. General Specification. Do not use the PLC in places with dust, soot, conductive dust, corrosive or gasable combustible gases, places exposed to high temperature, condensation, wind or rain or salt, or places that are subject to vibrations or impact. When using the module outside the range of the general specification may result in electrical shock, fire, malfunctions, or damage to the PLC.
- When dusting, filling holes or performing wiring, make sure that cutting and wiring debris or other foreign matter do not enter into the ventilation slits of the module. Such matter may cause fire, failure or malfunction.
- If the installation work is complete, remove the dust protection sheet from the ventilation slits of the PLC. If the sheet remains attached, it may cause fire, failure or malfunction.
- Securely connect control cables to their specified connectors. Poor contact may cause malfunction.

WIRING PRECAUTIONS
- Before beginning any installation or wiring work, make sure all phases of the power supply have been shut off. Failure to shut off the power supply may cause electrical shock or damage to the module.
- When wiring is performed with the power supply being on, fail the CC-Link wires, make sure that the terminal cover provided as an accessory has been attached to the module. Failing to attach the cover may cause electrical shock.
- For the CC-Link system, use dedicated cables specified by the manufacturer. The performance of the CC-Link system cannot be guaranteed with any other cable or dedicated cables other than those specified by the manufacturer.
- For the maximum total extension length and the cable length between stations, observe the specifications described in USER'S MANUAL. With wiring outside the specification range, normal data transmission cannot be guaranteed.
- Make sure to connect control cables and communication cables connected to the module by placing them in a duct or clamping them. Cables not placed in a duct or left unclamped may hang or shift, allowing them to be pulled accidentally, which may cause damage to the module or the cables.
- When connecting a communication/power cable connected to the module, do not hold the module and the cable may be damaged.
- Do not bundle control cables and communication cables with the main circuit and power cables. Keep control cables and communication cables at least 100 mm away from the main circuit and power cables. Otherwise, electric noise may cause a malfunction.

2.1 Installation
Install the FX2N-16CC-PLCM on the right side of the FX2N/FX3N/FX0N/FX1N/FX1N/CQM1 Series main unit extension unit or another extension unit. (For the FX1N Series, the FX1N-CNVI-F is required. For the FX1N Series, the FX1N-CNVI-F or the FX1N-1PS-F is required.) The FX2N-16CC-PLCM can be installed using a DIN rail (DIN 43677, width: 35 mm (1.38 in.) or directly with M4 (0.16 in.) screws.
In the case of direct installation, provide a space of 1 to 2 mm (0.04 to 0.08 in.) between the units.

2.2 Dedicated CC-Link Cables
Use dedicated CC-link cables in the CC-link system. If any other cable is used, the performance of the CC-link system cannot be guaranteed.

2.3 Wiring with Dedicated CC-Link Cables
This section describes the connection method of dedicated CC-link cables.
- The cables can be connected regardless of the station number.
- Make sure to connect a terminal resistor (offered as an accessory to the module) between the terminals DA and DB in the modules at both ends of the CC-Link system.
- In the CC-link system, the terminal resistor required varies depending on the cable used.
- When a dedicated CC-link cable is used: 110 Ω/1/2 W (brown, brown and brown)
- When a dedicated high-performance CC-link cable is used: 130 Ω/1/2 W (brown, orange and brown)
- The master module can be connected at either of the system.
- Star configuration is also allowed.
- The figure below shows the connection method.

3. SPECIFICATION

3.1 Power Supply Specification
- 24V DC external power supply
Supplied from a 24V DC (150 mA) external terminal block.
- 5V DC internal power supply
Supplied from a 5V DC (150 mA) internal terminal block.

3.2 General Specification
- Diode: 60V 0.16A
- Load current per station: 15 mA
- Communication method: Polling method
- Transmission speed: Selectable (by rotary switch): 156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps or 10 Mbps
- Transmission list: 1,200 m maximum

3.3 Performance Specification
- Number of input/output points per system
- Number of connected modules (max. 256)
- Number of remote I/O points per system
- Maximum number of connected modules
- Effective number of data registration to EEPROM
- Parameter registration to EEPROM: Approximately 10,000 times

4. COMMUNICATION WITH PLC
- Communication with PLC By FROM and TO instructions or direct specification of buffer memory (FX 3U/3UG Series PLCs via the buffer memory) or by pulse output method.
- Recommended method: Asynchronous mode
- Operation indication
- R (RAS function) = Low
- L (Communication failure) = Low
- ERR = Low when communication error has occurred.
- LD = Low while data is being transmitted.
- RD = Low while data is being received.

5. ACKNOWLEDGMENTS
- Dedicated CC-Link cables and dedicated high-performance CC-Link cables cannot be used at the same time. Attach a terminal resistor in accordance with the cable type.
- *2 When an FX3U Series PLC is connected, the interface FX3U-CNVI-F is required.
- *3 When an FX5U Series PLC is connected, the interface FX5U-CNVI-F or FX5U-CNVI-F-1PS is required.
- *4 The [RD] LED is darker as the transmission speed is faster and as the number of connected stations is smaller.

Warranty
Warranty: Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi Electric Corporation's liability for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

For safe use
- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric.
- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

Manual number: JY992D93201
Manual revision: D
Date: JUN. 2010
Specifications are subject to change without notice
2. Installation and wiring

**INSTALLATION PRECAUTIONS**
- Use the module in the environment described in the USER'S MANUAL General Specification.
- Do not use the PLC in places with dust, soot, conductive dust, corrosive or combustible gas, places exposed to high temperatures, condensation, wind or rain or where there are vibrations or impacts.
- Using the module outside the range of the general specification may result in electrical shock, fire, malfunctions, or damage to the PLC.
- When drilling screw holes or performing wiring, make sure that cutting and wiring debris or other foreign matter do not enter the ventilation slits of the module.
- Some matter may cause fire, failure or malfunction.
- When the installation work is complete, remove the dust protection sheet from the ventilation slits of the PLC.
- If the sheet remains attached, it may cause fire, failure or malfunction.
- Securely connect extension cables to their specified connectors.
- Poor contact may cause malfunction.

**WIRING PRECAUTIONS**
- Before beginning any installation or wiring work, make sure all phases of the power supply have been shut off.
- Failing to shut off the power supply may cause electrical shock or damage to the module.
- Following installation or wiring work of the power supply and operating the PLC make sure that the terminal cover provided as an accessory has been attached to the module.
- Failing to attach the cover may cause electrical shock.
- For the CC-Link system, use dedicated cables specified by the manufacturer.
- The performance of the CC-Link system cannot be guaranteed with any cable other than those dedicated cables specified by the manufacturer.
- For the maximum total extension length and the cable length between stations, observe the specifications described in USER'S MANUAL.
- With wiring outside the specified range, normal data transfer cannot be guaranteed.
- Make sure to connect communication cables and power cables connected to the module by placing them in a duct or clamping them.
- Cables not placed in a duct or left unclamped may hang or shift, allowing them to be pulled accidentally, which may cause damage to the module or the cables.
- When disconnecting a communication/power cable connected to the module, do not hold the cable area.
- For a cable with a connector, hold the connector attached to the cable.
- For a cable connected to a terminal block, loosen screws of the terminal block before disconnecting the communication cable.
- If a cable is pulled while it is connected to a module, the module may malfunction or the module and the cable may be damaged.

**WIRING PRECAUTIONS**
- Use a grounding resistor of 100Ω or less with a wire of 2mm2 or more to ground the grounding terminal in the PLC main unit. However, never perform common grounding with a high voltage circuit.
- Otherwise, electric noise may cause a malfunction.

2.1 Installation

Install the FX2N-16CCL-M on the right side of the FX/FPx/FPz/FLx/FLz/FLz/FX3G/FX3G/FX3U/FX3UC Series main unit extension unit or another extension block. (For the FX3NC Series, the FX3NC-CNV-IF is required. For the FX1N Series, the FX1N-CNV-IF or FX1N-1PS-5V is required.)

The FX3UC-16CCL-M can be installed using a DIN rail (DIN 43627, width: 35 mm (1.38 in.) or directly with M4 (0.16 in.) screws.

In the case of direct installation, provide a space of 1 to 2 mm (0.04 to 0.08 in.) between the units.

2.2 Dedicated CC-Link Cables

Use dedicated CC-Link cables in the CC-Link system.

This section describes the connection method of dedicated CC-Link cables.

- The cables can be connected regardless of the station number.
- Make sure to connect a terminal resistor (offered as an accessory to the module) between the terminals SLD and FG in each module, and both ends should be grounded. (Class D = solid grounding)
- The terminals SLD and FG are connected to each other inside the module.
- Make sure to use only one type of cable (dedicated CC-Link cables or dedicated CC-Link high-performance cables).
- If both types of cables are used together, normal data transmission cannot be guaranteed.

3. SPECIFICATION

3.1 Power Supply Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC power supply voltage</td>
<td>24V DC</td>
</tr>
<tr>
<td>DC power supply current</td>
<td>0.5A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>0.5W (at 24V DC)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0°C to 55°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-25°C to 85°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>35% to 95% (non-condensing)</td>
</tr>
</tbody>
</table>

3.2 General Specification

Dielectric strength: 600V AC for 1 minute (between the PLC and the power supply). Automatic return function: Provided

3.3 Performance Specification

For the CC-Link version:

**Applicable function**
- Master station function
- Slave station function
- Remote module function (The local station and standby master station functions are available.)
- Slave station cutoff function
- Error detection by link special relay/register
- Automatic refresh: Not provided

**Number of occupied I/O points**
- 8 points of FX series I/O points (8 points in total. The ratio between inputs and outputs is arbitrary.)
- 8 points for FX series PLCs (8 points in total. The ratio between inputs and outputs is arbitrary.)

**Connectable PLC**
- FX1N, FX3N (V 2.20 or later)
- FX2N, FX3N (V 2.20 or later)
- FX3UC, FX3UC-1PS-5V

**Number of occupied terminal resistor**
- 8 points of FX series I/O points (8 points in total. The ratio between inputs and outputs is arbitrary.)

**WARRANTY**

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of the product failure, such as accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or other systems, please consult Mitsubishi Electric.

- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

Manual number: JY992D93201

Date: JUN. 2010

Specifications are subject to change without notice.
1.2 Overview

The CC-Link master block FXn×16CCL-M is a special extension block which assigns an FX Series PLC as the master station of the CC-Link system.

1) Remote I/O stations and remote device stations can be connected to the master station (FX Series PLC).

Master station : Station which controls the data link system
Remote I/O station : Remote station which handles only bit information
Remote device station : Remote station which handles both bit information and word information

2) By using the CC-Link interface block FXn×32CCL, two or more FX Series PLCs can be connected as remote device stations to configure a simple distributed system.

1.3 Dimensions and Setting

Dimensions: mm (inches)  MASS (Weight): 0.4 kg (0.88 lbs)

1.1 Associated Manuals

<table>
<thead>
<tr>
<th>Manual name</th>
<th>Manual number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FXn×16CCL-M User's Manual</td>
<td>JY992D93101 (sent separately)</td>
<td>Describes programming and handling of the CC-Link master block FXn×16CCL-M.</td>
</tr>
<tr>
<td>FXn×16CCL-M Programming Manual</td>
<td>JY992D88101</td>
<td>Explains the instructions available to the FXn×16CCL-M PLC.</td>
</tr>
<tr>
<td>FXn×16CCL-M Programming Manual</td>
<td>JY992D16601 (packed with product)</td>
<td>Describes instruction details such as specifications and wiring of the FXn×16CCL-M PLC.</td>
</tr>
<tr>
<td>FXn×16CCL-M Hardware Manual</td>
<td>JY992D68301</td>
<td>Describes the contents related to the hardware such as specifications, wiring and mounting of the FXn×16CCL-M PLC.</td>
</tr>
<tr>
<td>FXn×16CCL-M Hardware Manual</td>
<td>JY992D33401 (packed with product)</td>
<td>Describes the name and part of harding of the FXn×32CCL PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D31501 (sent separately)</td>
<td>Describes the contents related to the hardware such as specifications, wiring and mounting of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D18601 (packed with product)</td>
<td>Describes the name and part of harding of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D16501 (sent separately)</td>
<td>Describes the contents related to the hardware such as specifications, wiring and mounting of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D76401 (packed with product)</td>
<td>Describes the hardware specifications, wiring and mounting of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D27201 (packed with product)</td>
<td>Describes the contents related to the hardware such as specifications, wiring and mounting of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D26801</td>
<td>Describes the name and part of harding of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×Series User's Manual - Hardware Edition</td>
<td>JY992D28701 (sent separately)</td>
<td>Describes the contents related to the hardware such as specifications, wiring and mounting of the FXn×Series PLC.</td>
</tr>
<tr>
<td>FXn×32CCL User's Manual</td>
<td>JY992D71801</td>
<td>Describes programming and handling of the CC-Link interface block FXn×32CCL.</td>
</tr>
</tbody>
</table>

1.4 Transmission speed setting switch

Table of transmission speed setting switches:

<table>
<thead>
<tr>
<th>Number</th>
<th>Setting description</th>
<th>Switch status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>156 kbps</td>
<td>ON</td>
</tr>
<tr>
<td>2</td>
<td>625 kbps</td>
<td>OFF</td>
</tr>
<tr>
<td>3</td>
<td>1.2 Mbps</td>
<td>OFF</td>
</tr>
<tr>
<td>4</td>
<td>2.5 Mbps</td>
<td>ON</td>
</tr>
<tr>
<td>5 to 9</td>
<td>Setting error (The SW LED indicator turns ON.)</td>
<td>OFF</td>
</tr>
</tbody>
</table>

1.5 Mode setting switch

Table of mode setting switches:

<table>
<thead>
<tr>
<th>Setting name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1 to SW9</td>
<td>Setting error (The SW LED indicator turns ON.)</td>
</tr>
<tr>
<td>CLR</td>
<td>Calibration error occurs.</td>
</tr>
</tbody>
</table>

2.5M Parameter verification test Refer to USER'S MANUAL.

Note's on the symbology used in this manual

At various times through out this manual certain symbols will be used to highlight points of information which are intended to ensure the user's personal safety and protect the integrity of the equipment.

1) LED

- RUN: Module is normal.
- ERR.: Communication error occurred in any station.
- TEST1: Test result indication
- TEST2: Test result indication
- L RUN: Data link is being executed (host station).
- L ERR.: Communication error occurred in any station.
- MST: Set as the master station.
- TEB1: Test result indication
- TEB2: Test result indication
- HLD: Hold (The master station is already present in the same line).
- M6.5 Screw

2) Power indicator

- POWER: 24V DC is supplied from the outside.
INSTALLATION PRECAUTIONS

- Use the module in the environment described in the USER’S MANUAL General Specification.
- Do not use the PLC in places with dust, soot, conductive dust or combustible gas, places exposed to high temperature, condensation, wind or salt spray.
- Using the module outside the range of the general specification may result in electrical shock, fire, malfunctions, or damage to the PLC.
- When drilling screws holes or performing wiring, make sure that cutting and wiring debris or other foreign matter do not enter or damage the terminals or module. Such matter may cause fire, failure or malfunction.
- When the installation work is completed, remove the dust protection sheet from the ventilation slits of the PLC. If the sheet remains attached, it may cause fire, failure or malfunction.
- Securely connect extension cables to their specified connectors. Poor contact may cause malfunction.

WIRING PRECAUTIONS

- Before beginning any installation or wiring work, make sure all phases of the power supply have been shut off.
- Failing to shut off the power supply may cause electrical shock or damage to the module.
- Following installation or wiring during operation, if the power supply and operating current are interrupted, make sure that the terminal cover provided as an accessory has been attached to the module. Failing to attach the cover may cause electrical shock.
- For the CC-Link system, use dedicated cables specified by the manufacturer. The performance of the CC-Link system cannot be guaranteed with any other cable or dedicated one specified by the manufacturer.
- For the maximum total extension length and the cable length between stations, observe the specifications described in USER’S MANUAL.
- With wiring outside the specified range, normal data transmission cannot be guaranteed.
- Make sure to connect communication cables and power cables connected to the module by placing them in a dust-proof container to prevent dust or damage to the module or cables.
- When disconnecting a communication/power cable connected to the module, do not hold the cable area.
- For a cable with a connector, hold the connector attached to the cable. For a cable connected to a terminal block, loosen screws of the terminal block before disconnecting the cables. If a cable is pulled while it is connected to a module, the module may malfunction or the module and the cable may be damaged.

WIRING PRECAUTIONS

- Use a grounding resistor of 100Ω or less with a wire of 2mm² or more to ground the grounding terminal in the PLC main units. However, never perform common grounding with a high voltage circuit.
- Otherwise, electric noise may cause a malfunction.

2.1 Installation

Install the FX series CC-Link module on the right side of the FX/PX/PX-CC/CC/CC-Link/CC-link series main extension unit or another extension unit. (For the FX-series, the FX-series-CC/CC/CC-Link-series is required. For the FX-series, the FX-series-CC/CC/CC-Link-series is required. When an FX-series PLC is used, special module version 1.0.01 is required.)

The FX-series PLC is available as a DCS (DIN 44277, width: 35 mm (1.38 in.) or with direct connection or M4 (0.16 in.) screws. In the case of direct installation, provide a space of 1 to 2 mm (0.04 to 0.08 in.) between the units.

2.2 Dedicated CC-Link Cables

Use dedicated CC-Link cables in the CC-link system. If any other cable is used, the performance of the CC-link system cannot be guaranteed.

This section describes the connection method of dedicated CC-Link cables.

- The cables can be connected regardless of the station number.
- Make sure to connect a terminal resistor (offered as an accessory to the module) between the terminals DA and DB in the module at both ends of the CC-Link system.
- In the CC-link system, the terminal resistor required varies depending on the cable used.
  - When a dedicated CC-link cable is used: 110Ω 1/2 W (brown, brown and brown)
  - When a dedicated HFCC-Link cable is used: 130Ω 1/2 W (brown, orange, and brown)
- The master module can be connected at either of the station.
- Star configuration is also possible.
- The figure below shows the connection method.

3. SPECIFICATION

3.1 Power Supply Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Range</td>
<td>24V DC (RMS) or 24V DC internal terminal block.</td>
</tr>
<tr>
<td>DC Internal Power Supply</td>
<td>5V DC of PLC is not used.</td>
</tr>
<tr>
<td>DC Current Power</td>
<td>5V DC is converted from 24V DC external power supply.</td>
</tr>
</tbody>
</table>

3.2 General Specification

- Dedicated clock: 600MHz AC 1 minute (and the PLC and ground plane) |
- Other specification is equivalent to that of the PLC main unit.

3.3 Performance Specification

- Maximum number of connected modules

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote I/O stations: 256 points per system</td>
<td>256 points (Number of remote I/O points) = 256</td>
</tr>
<tr>
<td>Remote station: 128 points per system</td>
<td>128 points (Number of remote I/O points) = 128</td>
</tr>
<tr>
<td>Remote register: 64 points per system</td>
<td>64 points (Number of remote I/O points) = 64</td>
</tr>
</tbody>
</table>

4. Installation and Wiring

- The terminals dedicated CC-Link cable should be connected to the terminals SLD and FG in each module, and both ends should be grounded (Class D = solid grounding). The terminals SLD and FG are connected to each other inside the module.
- Use dedicated CC-Link cables or dedicated high-performance CC-Link cables. If both types of cables are used together, normal data transmission cannot be guaranteed.

Software

- RS-232C: Automatic refresh: Not provided
- RS-232C: Local station function: Not provided, Standby master station function: Not provided

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Manual revision: D
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Specifications are subject to change without notice.