



Side A JAPANESE
Side B ENGLISH

Programmable Controller
MELSEC-F

FX3U-64CCL

INSTALLATION MANUAL



Manual Number	JY997D29801
Revision	F
Date	May 2018

This manual describes the part names, dimensions, and specifications of the product. Before use, read this manual and manuals of relevant products fully to acquire proficiency in handling and operating the product. Make sure to learn all the product information, safety information, and precautions.

Store this manual in a safe place so that it can be taken out and read whenever necessary. Always forward it to the end user.

Registration
The company name and the product name to be described in this manual are the registered trademarks or trademarks of each company.

Effective May 2018
Specifications are subject to change without notice.
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Safety Precautions (Read these precautions before use.)

This manual classifies the safety precautions into two categories:

WARNING and CAUTION

WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Depending on circumstances, procedures indicated by CAUTION may also cause severe injury.

It is important to follow all precautions for personal safety.

Associated Manuals

Manual name	Manual No.	Description
FX3G Series User's Manual - Hardware Edition	JY997D31301 MODEL CODE: 09R521	Explains the FX3G Series PLC specifications for I/O, wiring, installation, and maintenance.
FX3GC Series User's Manual - Hardware Edition	JY997D45401 MODEL CODE: 09R533	Explains the FX3GC Series PLC specifications for I/O, wiring, installation, and maintenance.
FX3U Series User's Manual - Hardware Edition	JY997D16501 MODEL CODE: 09R515	Explains the FX3U Series PLC specifications for I/O, wiring, installation, and maintenance.
FX3UC Series User's Manual - Hardware Edition	JY997D28701 MODEL CODE: 09R519	Explains the FX3UC Series PLC specifications for I/O, wiring, installation, and maintenance.
FX3S/FX3G/FX3GC/FX3U/FX3UC Series Programming Manual - Basic & Applied Instruction Edition	JY997D16601 MODEL CODE: 09R517	Describes PLC programming for basic/applied instructions and devices.
FX3U-64CCL User's Manual	JY997D30401 MODEL CODE: 09R718	Describes FX3U-64CCL type CC-Link interface block details.
MELSEC iQ-F FX5U User's Manual (Hardware)	JY997D55301 MODEL CODE: 09R536	Explains the FX5U PLC specifications for I/O, wiring, installation, and maintenance.
MELSEC iQ-F FX5UC User's Manual (Hardware)	JY997D61401 MODEL CODE: 09R558	Explains the FX5UC PLC specifications for I/O, wiring, installation, and maintenance.

Manuals for the FX3G PLC will be available in September 2008 or later.

How to obtain manuals

For product manuals or documents, contact the Mitsubishi Electric dealer from whom you purchased your product.

Certification of UL, cUL standards

FX3U-64CCL units comply with the UL standards (UL, cUL).

UL, cUL File Number: E95239

Regarding the standards that comply with the main unit, please refer to either the FX series product catalog or consult with your nearest Mitsubishi product provider.

Compliance with EC directive (CE Marking)

This note does not guarantee that an entire mechanical module produced in accordance with the contents of this note will comply with the following standards. Compliance to EMC directive and LVD directive for the entire mechanical module should be checked by the user / manufacturer. For more information please consult with your nearest Mitsubishi product provider.

Regarding the standards that comply with the main unit, please refer to either the FX series product catalog or consult with your nearest Mitsubishi product provider.

Requirement for Compliance with EMC directive

The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Electromagnetic Compatibility (2014/30/EU) when used as directed by the appropriate documentation.

Attention

This product is designed for use in industrial applications.

Type: Programmable Controller (Open Type Equipment)

Models: MELSEC FX3U series manufactured from March 1st, 2008

FX3U-64CCL

Standard	Remark
EN61131-2:2007 Programmable controllers - Equipment requirements and tests	Compliance with all relevant aspects of the standard. EMI • Radiated Emission • Conducted Emission EMS • Radiated electromagnetic field • Fast Transient burst • Electrostatic discharge • High-energy surge • Voltage drops and interruptions • Conducted RF • Power frequency magnetic field

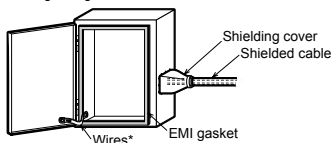
Caution for EC Directive

Installation in Enclosure

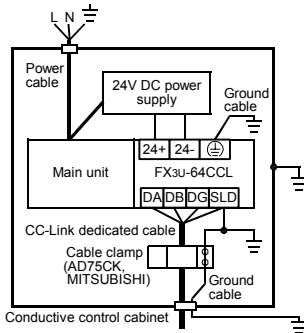
Programmable controllers are open-type devices that must be installed and used within conductive control cabinets. Please use the programmable controller while installed within a conductive shielded control cabinet. Please secure the cabinet door to the control cabinet (for conduction). Installation within a control cabinet greatly affects the safety of the system and aids in shielding noise from the programmable controller.

Control cabinet

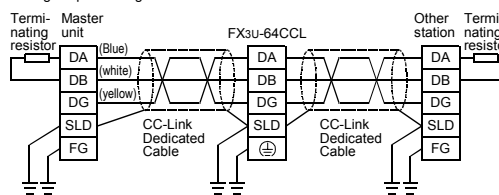
- The control cabinet must be conductive.
- Ground the control cabinet with the thickest possible grounding cable.
- To ensure that there is electric contact between the control cabinet and its door, connect the cabinet and its doors with thick wires.
- In order to suppress the leakage of radio waves, the control cabinet structure must have minimal openings. Also, wrap the cable holes with a shielding cover or other shielding devices.
- The gap between the control cabinet and its door must be as small as possible by attaching EMI gaskets between them.



- * These wires are used to improve the conductivity between the door and control cabinet.
- Configuration example inside control cabinet



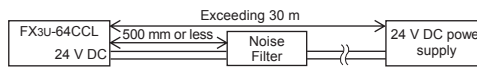
Wiring simplified diagram



Notes for compliance with EN61131-2:2007

General notes on the use of the power supply cable

- The FX3U-64CCL unit requires that the cable used for power supply is 30 m or less.
- When the cable used for power supply exceeds 30 m, a noise filter (Ex. TDK-Lambda MBS1205-22 or similar) should be placed on the 24 V DC power cabling as close (within 500 mm) to the FX3U-64CCL termination points as possible, refer to following figure.



1. Introduction

The CC-Link interface block FX3U-64CCL (hereinafter called 64CCL) is a special function block to connect the FX3G/FX3GC/FX3U/FX3UC/FX5U/FX5UC programmable controller to a CC-Link network.

The 64CCL works as an intelligent device station on a CC-Link network.

Only one 64CCL unit can be connected to a single programmable controller main unit.

→ For system configuration, refer to the FX3U-64CCL User's Manual.

1.1 Major Features of the FX3U-64CCL

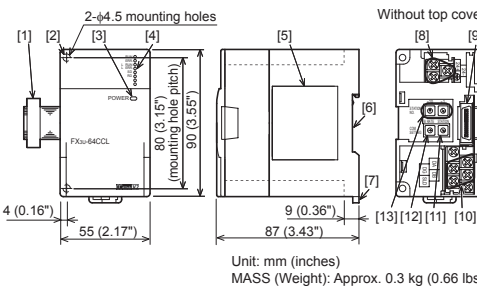
- Compatible with CC-Link Ver. 2.00 and Ver. 1.10
The 64CCL is compatible with CC-Link Ver. 2.00, and enables expanded cyclic transmission to facilitate the handling of applications requiring multiple data processing.
In addition to Ver. 2.00, Ver. 1.10 is also supported with the 64CCL.

1.2 Incorporated Items

Check to ensure the following product and items are included in the package:

Included Item	
CC-Link interface block FX3U-64CCL	1 unit
Special unit/block No. label	1 sheet
Dust proof protection sheet	1 sheet
Installation Manual (This manual)	1 manual

1.3 External Dimensions and Part Names



- Extension cable
- Direct mounting hole: 2 holes of $\phi 4.5$ (0.18") (mounting screw: M4 screw)
- POWER LED (green)
- Status LEDs
- Name plate
- DIN rail mounting groove (DIN rail: DIN46277, 35mm (1.38") width)
- DIN rail mounting hook
- Power supply terminal block
- Extension connector
- CC-Link connection terminal block
- Number of occupied stations and expanded cyclic setting switch

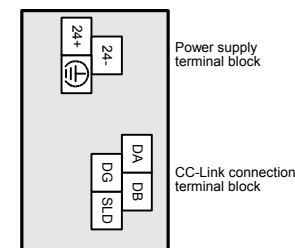
[12] Transmission rate setting switch

[13] Station number setting switch

1.4 Power and status LEDs

LED display	Color	Status	Description
POWER	Green	OFF	Power is not being supplied from the external power supply (24 V DC).
		ON	Power is being supplied from the external power supply (24 V DC).
RUN	Green	OFF	64CCL has failed.
		ON	Under 64CCL normal operation.
ERR.	Red	OFF	No errors.
		ON	Error in the settings, error in the parameter details, error with the communication, errors with the H/W.
L RUN	Green	OFF	Offline.
		ON	Data link is being executed.
L ERR.	Red	OFF	No communication error.
		Flicker	The switch setting was changed after start. There is no terminating resistor. Influence from noise.
		ON	There is a data linking error. There is a setting error.
SD	Green	OFF	Data is not being sent.
		ON	Data is being sent.
RD	Green	OFF	Data is not being received.
		ON	Data is being received.

1.5 Terminal layout



- Terminal screw and terminal block mounting screw size, and tightening torque
Power supply terminal block, CC-Link connection terminal block:
M3 screw, 0.42 to 0.58 N•m
CC-Link connection terminal block mounting screw (black):
M3.5 screw, 0.66 to 0.91 N•m
Do not tighten the terminal block mounting screws with a torque outside the above-mentioned range.
Failure to do so may cause equipment failures or malfunctions.

CC-Link connection terminal block can be detached or attached. Make sure to cut off all phases of the power supply externally.

For details on the wiring and the types of connection cables needed to connect to the terminal blocks shown in the figure above, refer to the following manual.
→ Refer to the FX3U-64CCL User's Manual.

1.6 Switch setting

With regard to the switch setting for station number, transmission rate, hardware test, number of occupied stations and expanded cyclic transmission, the switch settings become valid after 64CCL startup.

If the switch settings are changed after 64CCL startup, the L ERR. LED will flicker. To change the switch setting, power OFF the 64CCL once, and power it ON again. For details on the switch setting, refer to the following manual.
→ Refer to the FX3U-64CCL User's Manual.

FX3U-64CCL INSTALLATION MANUAL

Table with Manual Number, Revision, and Date.



This manual describes the part names, dimensions, and specifications of the product. Before use, read this manual and manuals of relevant products fully to acquire proficiency in handling and operating the product.

Effective May 2018 Specifications are subject to change without notice. © 2008 Mitsubishi Electric Corporation

Safety Precautions (Read these precautions before use.)

This manual classifies the safety precautions into two categories: [WARNING] and [CAUTION].

Warning and Caution symbols with corresponding text descriptions.

Depending on circumstances, procedures indicated by [CAUTION] may also cause severe injury. It is important to follow all precautions for personal safety.

Associated Manuals

Table listing associated manuals for FX3G, FX3GC, FX3U, FX3UC, FX3S, and MELSEC IQ-F series.

Manuals for the FX3G PLC will be available in September 2008 or later. How to obtain manuals For product manuals or documents, contact the Mitsubishi Electric dealer from whom you purchased your product.

Certification of UL, cUL standards

FX3U-64CCL units comply with the UL standards (UL, cUL). UL, cUL File Number: E95239 Regarding the standards that comply with the main unit, please refer to either the FX series product catalog or consult with your nearest Mitsubishi product provider.

Compliance with EC directive (CE Marking)

This note does not guarantee that an entire mechanical module produced in accordance with the contents of this note will comply with the following standards. Compliance to EMC directive and LVD directive for the entire mechanical module should be checked by the user / manufacturer.

Requirement for Compliance with EMC directive The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Electromagnetic Compatibility (2014/30/EU) when used as directed by the appropriate documentation.

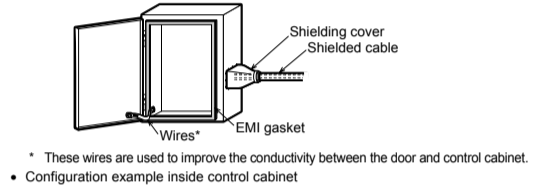
Table with Standard and Remark columns for EMC compliance.

Table with Standard and Remark columns for CE marking compliance.

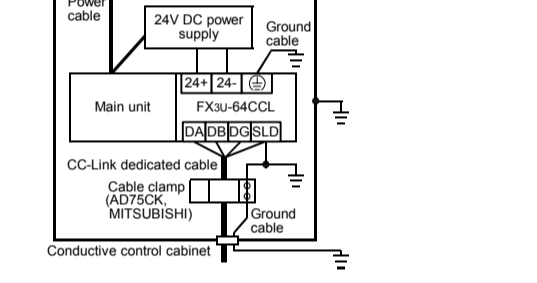
Caution for EC Directive

Installation in Enclosure Programmable controllers are open-type devices that must be installed and used within conductive control cabinets. Please use the programmable controller while installed within a conductive shielded control cabinet.

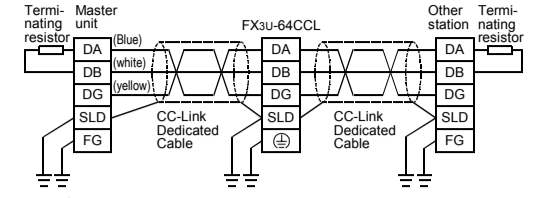
- Control cabinet - The control cabinet must be conductive. - Ground the control cabinet with the thickest possible grounding cable. - To ensure that there is electric contact between the control cabinet and its door, connect the cabinet and its doors with thick wires.



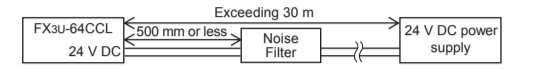
- These wires are used to improve the conductivity between the door and control cabinet. - Configuration example inside control cabinet



Wiring simplified diagram



- Notes for compliance with EN61131-2:2007 General notes on the use of the power supply cable - The FX3U-64CCL unit requires that the cable used for power supply is 30 m or less. - When the cable used for power supply exceeds 30 m, a noise filter (Ex. TDK-Lambda MBS1205-22 or similar) should be placed on the 24 V DC power supply cable as close (within 500 mm) to the FX3U-64CCL termination points as possible, refer to following figure.



1. Introduction

The CC-Link interface block FX3U-64CCL (hereinafter called 64CCL) is a special function block to connect the FX3G/FX3GC/FX3U/FX3UC/FX5U/FX5UC programmable controller to a CC-Link network. The 64CCL works as an intelligent device station on a CC-Link network. Only one 64CCL unit can be connected to a single programmable controller main unit.

For system configuration, refer to the FX3U-64CCL User's Manual.

1.1 Major Features of the FX3U-64CCL

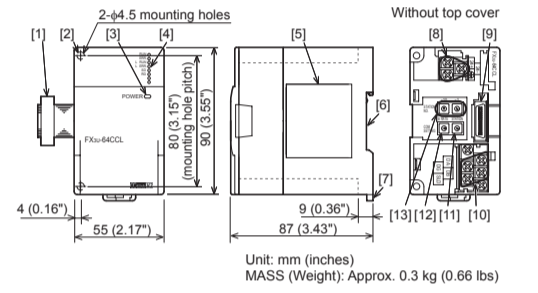
- 1) Compatible with CC-Link Ver. 2.00 and Ver. 1.10 The 64CCL is compatible with CC-Link Ver. 2.00, and enables expanded cyclic transmission to facilitate the handling of applications requiring multiple data processing. In addition to Ver. 2.00, Ver. 1.10 is also supported with the 64CCL.

1.2 Incorporated Items

Check to ensure the following product and items are included in the package:

Table listing included items: CC-Link interface block FX3U-64CCL (1 unit), Special unit/block No. label (1 sheet), Dust proof protection sheet (1 sheet), Installation Manual (This manual) (1 manual).

1.3 External Dimensions and Part Names



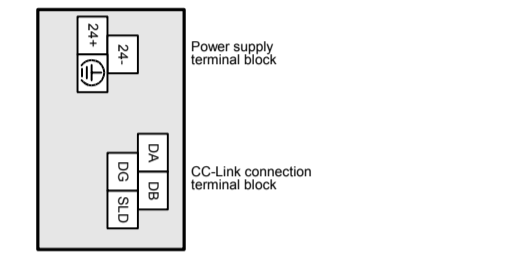
- [1] Extension cable [2] Direct mounting hole: 2 holes of φ 4.5 (0.18") (mounting screw: M4 screw) [3] POWER LED (green) [4] Status LEDs [5] Name plate [6] DIN rail mounting groove (DIN rail: DIN46277, 35mm (1.38") width) [7] DIN rail mounting hook [8] Power supply terminal block [9] Extension connector [10] CC-Link connection terminal block [11] Number of occupied stations and expanded cyclic setting switch

- [12] Transmission rate setting switch [13] Station number setting switch

1.4 Power and status LEDs

Table with LED display, Color, Status, and Description columns for POWER, RUN, ERR, L RUN, and L ERR LEDs.

1.5 Terminal layout



- Terminal screw and terminal block mounting screw size, and tightening torque Power supply terminal block, CC-Link connection terminal block: M3 screw, 0.42 to 0.58 N·m CC-Link connection terminal block mounting screw (black): M3.5 screw, 0.66 to 0.91 N·m Do not tighten the terminal block mounting screws with a torque outside the above-mentioned range. Failure to do so may cause equipment failures or malfunctions.

CC-Link connection terminal block can be detached or attached. Make sure to cut off all phases of the power supply externally. For details on the wiring and the types of connection cables needed to connect to the terminal blocks shown in the figure above, refer to the following manual.

Refer to the FX3U-64CCL User's Manual.

1.6 Switch setting

With regard to the switch setting for station number, transmission rate, hardware test, number of occupied stations and expanded cyclic transmission, the switch settings become valid after 64CCL startup. If the switch settings are changed after 64CCL startup, the L ERR LED will flicker. To change the switch setting, power OFF the 64CCL once, and power it ON again. For details on the switch setting, refer to the following manual.

Refer to the FX3U-64CCL User's Manual.

1.6.1 Station number setting

Table for station number setting with Setting items, Range, and Description.

1.6.2 Transmission rate setting, hardware test

Table for transmission rate setting and hardware test with Setting, Description, and Status.

1.6.3 Number of occupied stations, expanded cyclic setting

Table for number of occupied stations and expanded cyclic setting with Setting, Number of occupied stations, and Expanded cyclic setting.

2. Installation

Installation Precautions table with WARNING symbol and text.

Installation Precautions table with CAUTION symbol and text.

For details on anchoring, refer to the following manual. Refer to the FX3U-64CCL User's Manual.

2.1 Connection with PLC

Only one 64CCL can be connected to the right side of a PLC main unit or extension unit/block (including special function units/blocks). For connection to an FX3GC/FX3UC Series PLC or FX2NC Series PLC extension block, an FX2NC-CN-V-IF or FX3UC-1PS-5V is required. For connection to FX5U/FX5UC PLC, FX5-CN-V-BUS or FX5-CN-V-BUSC is required. For further information on installation arrangements, refer to the following manuals. For details, refer to the FX3G Series User's Manual - Hardware Edition. For details, refer to the FX3U Series User's Manual - Hardware Edition. For details, refer to the FX3UC Series User's Manual - Hardware Edition. For details, refer to the MELSEC IQ-F FX5U User's Manual (Hardware). For details, refer to the MELSEC IQ-F FX5UC User's Manual (Hardware).

2.2 Mounting

The product is mounted by the following method. - DIN rail mounting - Direct mounting (mounting screw: M4 screw) For further information on installation arrangements, refer to the following manuals. For details, refer to the FX3G Series User's Manual - Hardware Edition. For details, refer to the FX3GC Series User's Manual - Hardware Edition. For details, refer to the FX3U Series User's Manual - Hardware Edition. For details, refer to the FX3UC Series User's Manual - Hardware Edition. For details, refer to the MELSEC IQ-F FX5U User's Manual (Hardware). For details, refer to the MELSEC IQ-F FX5UC User's Manual (Hardware).

2.2.1 DIN Rail Mounting

The product can be mounted on a DIN rail (DIN46277, 35mm (1.38") width). 1) Fit the upper edge of the DIN rail mounting groove (fig. A) onto the DIN rail. 2) Press the product against the DIN rail. - An interval space of 1 to 2 mm (0.04" to 0.08") between each unit is necessary.

2.2.2 Direct Mounting (mounting screw: M4 screw)

The product can be installed directly with screws. Refer to the External Dimensions (section 1.3) for the product's mounting hole pitch information. An interval space between each unit of 1 to 2 mm (0.04" to 0.08") is necessary.

3. Specification

For details on specifications, refer to the following manual. Refer to the FX3U-64CCL User's Manual.

Design Precautions table with WARNING symbol and detailed safety instructions.

Design Precautions table with CAUTION symbol and instructions on handling the product.

Disposal Precautions table with CAUTION symbol and instructions on recycling.

Transportation and Storage Precautions table with CAUTION symbol and instructions on handling during transport.

3.1 Applicable PLC

Table showing applicable PLC models and their applicability to the FX3U-64CCL.

The version number can be checked by monitoring the last three digits of D8001. *1 An FX2NC-CN-V-IF or FX3UC-1PS-5V is necessary to connect the 64CCL with the FX3GC/FX3UC PLC. *2 An FX5-CN-V-BUS or FX5-CN-V-BUSC is necessary to connect the 64CCL with the FX5U/FX5UC PLC.

3.2 General Specifications

Table with Item and Specification columns for general specifications.

3.3 Power Supply Specification

Table with Item and Specification columns for power supply specifications.

3.4 Performance Specification

Table with Item and Specification columns for performance specifications.

Table with Item and Specification columns for transmission distance, number of occupied stations, connection cable, and I/O points.

*1 When the setting of the 64CCL is the single setting, please set up the master station as a Ver.1 intelligent device station. When the setting of the 64CCL are the double setting, the quadruple setting, or the octuple setting, please set up the master station as a Ver.2 intelligent device station.

「电器电子产品有害物质限制使用标识要求」的表示方式

Table showing the representation of hazardous substance restrictions for electronic products.

Note: This symbol mark is for China only. 含有害6物质的名称, 含有量, 含有部品. 本产品中所含有的有害6物质的名称, 含有量, 含有部品如下表所示. 产品中有害物质的名称及含量. 部件名称, 有害物质: 铅 (Pb), 汞 (Hg), 镉 (Cd), 六价铬 (Cr (VI)), 多溴联苯 (PBB), 多溴二苯醚 (PBDE).

本表格依据SJ/T 11364的规定编制. 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下. 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求.

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Warranty Exclusion of loss in opportunity and secondary loss from warranty liability. Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to: (1) Damages caused by any cause found not to be the responsibility of Mitsubishi. (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products. (3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products. (4) Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.