

# CC-Link Interface Module User's Manual (Hardware Edition)



## CC-Link

Model	FA3-TH1C16XC, FA3-TH1C16Y, FA3-TH1C16YE, FA3-AT1C8X, FA3-AT1C8Y
50D-FG0470-A (2006)MEE	

## SAFETY PRECAUTIONS

(Read these precautions before using Mitsubishi Electric programmable controllers.) Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly. The precautions given in this manual are concerned with this product only. For the safety precautions of the programmable controller system, refer to the user's manual for the CPU module and the master module used. If the product is not used in a way that is described in this manual, the protection performance provided by the product may be impaired. In this manual, the safety precautions are classified into two levels: "▲ WARNING" and "▲ CAUTION".

<b>▲ WARNING</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
<b>▲ CAUTION</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "▲ CAUTION" may lead to serious consequences. Observe the precautions of both levels because they are important for personal and system safety. Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

### [Design Precautions]

- ▲ WARNING**
  - When a communication failure occurs in the network, data in the master module are held. Check the data link status of each station (SW0080 to SW0083) and configure an interlock circuit in the program to ensure that the entire system will operate safely. Failure to do so may result in an accident due to an incorrect output or malfunction.
  - Do not use any signals of system areas as a remote I/O signal. These signals are reserved for system use. Do not write any data to system areas in the remote register. If data is written to the system area in the remote register, correct operation of the module cannot be guaranteed.
  - Depending on the failure type of the module, the output may be held or an incorrect value may be outputted. Configure an external circuit for monitoring output signals that could cause a serious accident.

### [Design Precautions]

- ▲ CAUTION**
  - Store the modules at the storage ambient temperature and humidity. Failure to do so can cause malfunction or failure of the module.
  - Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.

### [Installation Precautions]

- ▲ WARNING**
  - Shut off all phases of the external power supply used in the system before installing. Failure to do so can cause electric shock or damage to or malfunction of the module.

### [Installation Precautions]

- ▲ CAUTION**
  - Use the module in an environment that complies with the general specifications described in this manual. Failure to do so can cause electric shock, fire, malfunction, or damage to or deterioration of the product.
  - Fix the module securely using DIN rails or mounting brackets. Tighten the mounting screws within the specified torque range. Failure to do so can cause the dropping, short circuit, or malfunction of the module. Overtightening can damage the mounting screw and/or module, resulting in the dropping, or malfunction of the module.
  - Do not directly touch the conductive part of the module. Doing so can cause malfunction or failure of the module.
  - Fully mount the terminal block and connector of each connection cable to the module connector. Insufficient contact can cause malfunction of the module.

### [Wiring Precautions]

- ▲ WARNING**
  - Shut off all phases of the external power supply used in the system before wiring. Failure to do so can cause electric shock or damage to or malfunction of the module.

### [Wiring Precautions]

- ▲ CAUTION**
  - Individually ground the FG terminal of the programmable controller with a ground resistance of 100 ohms or less. Failure to do so can cause electric shock or malfunction of the module.
  - Place the cables such as communication cables and power cables in a duct or clamp them. Failure to do so can cause movement or shifting of the cables, damage to the module or cables due to careless pulling, or malfunction of the module due to insufficient cable contact.
  - Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly. Failure to do so can cause fire or the module to fail or malfunction.
  - Check the interface type and correctly connect the cable. Connecting a cable to an incorrect interface or miswiring can cause the module or external devices to malfunction.
  - When removing the cable such as the connection cable or power cable from the module, do not pull the cable by the cable part. While securely pressing the open/close button on the terminal block, remove the cables. Pulling the cable connected to the module can cause damage to the module and/or cable or malfunction due to poor contact.
  - Prevent foreign matter such as dust or wire chips from entering the module. Failure to do so can cause fire, failure, or malfunction.
  - Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
  - Do not connect the polarities of +24V and 24G of external power supply conversely. Doing so can cause failure of the module.
  - Install the module on the DIN rail or fix it with mounting screws in the control panel before using it.

### [Startup and Maintenance Precautions]

- ▲ WARNING**
  - Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
  - Shut off the external power supply (all phases) used in the system before cleaning the module or tightening the mounting screws for the terminal block for module power supply and FG. Failure to do so may result in electric shock or cause the module to fail or malfunction.

### [Startup and Maintenance Precautions]

- ▲ CAUTION**
  - Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.
  - Shut off all phases of the external power supply used in the system before installing or removing the module from the control panel. Failure to do so may cause the module to fail or malfunction.
  - Shut off the external power supply (all phases) used in the system, and then, tighten terminal screws or module fixing screws within the specified torque range. Failure to do so may cause the module to fail or malfunction. Undertightening can cause drop of the screw, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
  - Do not drop or apply strong shock to the module. Doing so may damage the module.
  - Before handling the module or cables connected to the module, touch a conducting object such as grounded metal to release the static electricity from your body. Failure to do so may cause the module to fail or malfunction.
  - Do not use thinner, benzene, acetone, or kerosene when cleaning the module. Doing so can cause damage to the module.
  - Do not insert water or wire through the gaps in the case. Doing so can cause fire or electric shock.
  - Do not use this product as a detector for physical protection. Doing so can cause an accident due to an incorrect output or malfunction.

### [Startup and Maintenance Precautions]

- ▲ CAUTION**
  - In the unlikely event that something is abnormal with the product, stop using the product immediately, turn off the power supply, and please consult your local Mitsubishi Electric representative. Continued use of the module in this condition can cause the module to fail or malfunction.
  - Do not use the product in locations where chemical products and oil are scattered. Doing so can cause fire or the module to fail or malfunction.
  - When using the product, be sure to observe the defined ambient temperature and humidity. Doing so can cause fire or the module to fail or malfunction.
  - When the module is powered, do not touch the module, cables between the interface module and the digital signal converter (terminal module) or analog signal converter, and the terminal block for module power supply and FG. Doing so can cause the module to malfunction due to the static electricity in your body.
  - Startup and maintenance of a control panel must be performed by qualified maintenance personnel with knowledge of protection against electric shock. Lock the control panel so that only qualified maintenance personnel can operate it.
  - The ESD susceptibility symbol shown below is placed on the left side of a connector for the digital signal converter (terminal module) or analog signal converter. This symbol indicates that a module is susceptible to static electricity passed through the connector. Before handling the connector, touch a conducting object such as a grounded metal to release the static electricity from your body. Failure to do so may cause the module to fail or malfunction. Do not touch the connector when the module is powered. Doing so may result in injury or cause the module to malfunction due to the static electricity in your body.

### [Disposal Precautions]

- ▲ CAUTION**
  - When disposing of this product, treat it as industrial waste.

## CONDITIONS OF USE FOR THE PRODUCT

- This Mitsubishi Electric Engineering Company Limited (hereinafter referred to as "MEE") product shall be used in applications that will not lead to a major accident even in the unlikely event any failure or defect should occur in which this Mitsubishi product is incorporated, and shall be systematically provided with external backup and fail-safe functions that operate in the event of any failure or defect.
- This MEE product has been designed and manufactured as a general purpose product for general industry applications and the like. Thus, the product shall be excluded from use in special equipment, system, and other applications such as those listed below. If used in such applications, Mitsubishi shall not bear any responsibility whatsoever for the quality, performance, and safety of the Mitsubishi product (including but not limited to non-performance of main obligation, defect liability, quality assurance liability, tort liability, and product liability):
  - Applications in which the public could be greatly affected such as the applications of the nuclear and other power plants operated by the respective power companies
  - Applications in which a special quality assurance system is required, such as the applications of railway companies or government or other public offices
  - Use in aircraft, medical applications, railway applications, incineration and fuel devices, passenger vehicles, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected
 Note that such an application of the Mitsubishi product may be permitted as determined by Mitsubishi if the user accepts that the application is to be limited and a special quality is to be required (a quality that exceeds the general specifications). For details, please consult with Mitsubishi.

## EMC and Low Voltage Directives

### Mitsubishi Electric programmable controller system

The EMC Directive specifies that "products placed on the market must be so constructed that they do not cause excessive electromagnetic interference (emissions) and are not unduly affected by electromagnetic interference (immunity)". CC-Link Interface Module User's Manual (Detailed Edition) summarizes the precautions on compliance with the EMC Directive of the machinery constructed with the CC-Link interface module. These precautions are based on the requirements and the standards of the regulation, however, it does not guarantee that the entire machinery configured according to the descriptions will comply with the above mentioned directives. The method and judgment for complying with the EMC Directive must be determined by the person who constructs the entire machinery.

**Sales representative in EU member states**  
Authorized representative in EU member states is shown below.  
Company: MITSUBISHI ELECTRIC EUROPE B.V.  
Address: Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany

### Requirements to comply with the Low Voltage Directive

The CC-Link interface module is not subject to the Low Voltage Directive because a circuit in the module operates at a rated voltage of 24VDC or less.

## Performance Specifications

■ FA3-TH1C16XC (Digital input module, positive/negative common shared type)	
Item	FA3-TH1C16XC
Station type	Remote I/O station
Number of occupied stations	32 points are assigned to a station. (16 points are used.)
Number of input points	16 points
Rated input voltage	24VDC (allowable voltage range: 21.6 to 26.4VDC)
Isolation method	Photocoupler
Maximum number of simultaneous input points	100%
Input response time	1.5ms or shorter when OFF → ON, ON → OFF (at 24VDC)
Input Format	Positive/negative common shared type
Withstand voltage	500VAC for 1 minute across DC external terminal batch ground
Isolation resistance	500VDC across DC external terminal batch ground 10MΩ or higher (isolation resistance tester)
Module power supply <sup>3</sup>	Voltage: 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) Current: 90mA
Weight	160g

■ FA3-TH1C16Y, FA3-TH1C16YE (Digital output module, sink type/source type)		
Item	FA3-TH1C16Y	FA3-TH1C16YE
Station type	Remote I/O station	
Number of occupied stations	32 points are assigned to a station. (16 points are used.)	
Number of output points	16 points	
Isolation method	Photocoupler	
Rated load voltage	24VDC (allowable voltage range: 21.6 to 26.4VDC)	
Response time	OFF → ON: 0.5ms or less ON → OFF: 1.5ms or less	
Output type	Sink type	Source type
Withstand voltage	500VAC for 1 minute across DC external terminal batch ground	
Isolation resistance	500VDC across DC external terminal batch ground 10MΩ or higher (isolation resistance tester)	
Module power supply <sup>3</sup>	Voltage: 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) Current: 100mA	90mA
Weight	160g	

■ FA3-AT1C8X (Analog input type)	
Item	FA3-AT1C8X
Station type	Remote device station
CC-Link version	Ver.1.10
Number of occupied stations	2
Analog input	Voltage: 1 to 5VDC
Digital output	-384 to 16383
I/O characteristics <sup>1</sup>	Analog input range: 1 to 5V Digital output: 0 to 16000
Accuracy <sup>1</sup>	Ambient temperature: 0 to 55°C: ±0.3% (±48 digits) Ambient temperature: 25±5°C: ±0.1% (±16 digits) Maximum resolution: 0.25mV (accuracy of the maximum digital output value)
Maximum conversion speed	1ms/channel
Absolute maximum input	Voltage: ±15V
Number of analog input channels	8 channels/module
Isolation	Isolation method: Between communication system terminal and all analog input terminals: Digital isolator Between power supply system terminal and all analog input terminals: Transformer Between power supply system terminal and communication system terminal: Transformer Between analog output channels: Non-isolation Withstand voltage: 500VAC for 1 minute Isolation resistance: 5MΩ or higher (500VDC isolation resistance tester)
Module power supply <sup>3</sup>	Voltage: 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) Current: 120mA
Weight	170g

■ FA3-AT1C8Y (analog output type)	
Item	FA3-AT1C8Y
Station type	Remote device station
CC-Link version	Ver.1.10
Number of occupied stations	2
Digital input	0 to 16000
Analog output	1 to 5VDC (external load resistance: 10kΩ or higher)
I/O characteristics <sup>1</sup>	Digital input value: 0 to 16000 Analog output range: 1 to 5V
Accuracy <sup>1</sup>	Ambient temperature: 0 to 55°C: ±0.3% (±12mV) Ambient temperature: 25±5°C: ±0.1% (±4mV) Maximum resolution: 0.25mV (accuracy for the maximum analog output value)
Maximum conversion speed	1ms/1 channel
Output short circuit protection	Available
Absolute maximum output	+5V
Number of analog output channels	8 channels/module
Isolation	Isolation method: Between communication system terminal and all analog output terminals: Digital isolator Between power supply system terminal and all analog output terminals: Transformer Between power supply system terminal and communication system terminal: Transformer Between analog output channels: Non-isolation Withstand voltage: 500VAC for 1 minute Isolation resistance: 5MΩ or higher (500VDC isolation resistance tester)
Module power supply <sup>3</sup>	Voltage: 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) Current: 120mA
Weight	170g

■ Common items	
Item	FA3-TH1C16XC, FA3-TH1C16Y, FA3-TH1C16YE, FA3-AT1C8X, FA3-AT1C8Y
Applicable DIN rail	TH35-7.5Fe, TH35-7.5Al (compliant with JIS C 2812)
External interface	Communication part: Communication terminal block (two-piece spring clamp terminal block) Module power supply part: Terminal block for module power supply and FG (two-piece spring clamp terminal block)
CC-Link system terminal block <sup>2</sup>	Connection cable: ☒ CC-Link dedicated cable Applicable solderless terminal: ☒ Solderless terminals for the CC-Link dedicated cable
Terminal block for module power supply and FG <sup>2</sup>	Applicable wire size: ☒ Wires for module power supply and FG Applicable solderless terminal: ☒ Solderless terminals for cables to the module power supply and FG
External dimensions	H (height): 105mm, W (width): 40mm, D (depth): 70mm (Projection parts are not included.)

- For the I/O conversion characteristics and accuracy, refer to CC-Link Interface Module User's Manual (Detailed Edition)
- Note that only one cable can be inserted into a wire insertion opening and connected to a terminal. Connecting two or more cables to one terminal may cause poor contact.
- Use the power supply that meets the following requirements: LVLC (voltage and current limited circuit) of UL 508, SELV (Safety Extra-Low Voltage) circuit, LIM (Limited Energy Circuit).

## Connectable Devices

Devices connectable to the CC-Link interface module are as shown below.

Connectable devices for FA3-TH	
Module	Connectable device
FA3-TH1C16XC (Input type)	FA-TH16XRA20S, FA-TH16X100A31, FA-TH16X200A31, FA-TH16X24D31, FA-TH16X100A31L, FA-TH16X200A31L, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L
FA3-TH1C16Y (Sink output type)	FA-TH16YRA11, FA-TH16YRA11S, FA-TH16YRA20, FA-TH16YRA20S, FA-TH16YRA20SL, FA-TH16YRA21, FA-TH16YRA21S, FA-TH16YRAC20S, FA-TH16YRAB20SL, FA-TH16YSR11S, FA-TH16YSR20S, FA-TH16YSR21S, FA-TH16YTL11S, FA-TH16YTL21S, FA-TH16YTR20S, FA-TH16YTR20R, FA-TH16YTH11S, FA1-TH16Y2RA20S1E, FA1-TH16Y1SR20S1E, FA1-TH16Y1TR20S1E, FA1-TH16Y2SC20S1E
FA3-TH1C16YE (Source output type)	FA-TH16YTR20S, FA-TH16YTH11S, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y1SR20S1E, FA1-TH1E16Y1TR20S1E, FA1-TH1E16Y2SC20S1E

Connectable devices for FA3-AT	
Module	Connectable device
FA3-AT1C8X (Analog input type)	FA-ATB8XTB: FA-ATSVM1XV05, FA-ATSVM1XV15, FA-ATSVM1XV1010, FA-ATSVM1XA420, FA-ATSVM1XD, FA-ATSVM1XRPT, FA-ATSVM1XRPT0010, FA-ATSVM1XRPT0020, FA-ATSVM1XRJPT, FA-ATSVM1XTB, FA-ATSVM1XTR, FA-ATSVM1XTS, FA-ATSVM1XTK, FA-ATSVM1XTK0040, FA-ATSVM1XTK0060, FA-ATSVM1XTK0080, FA-ATSVM1XTE, FA-ATSVM1XTJ, FA-ATSVM1XTT, FA-ATSVM1XTN, FA-ATNDM5
FA3-AT1C8Y (Analog output type)	FA-ATB8YTB: FA-ATSVM1YV05, FA-ATSVM1YV15, FA-ATSVM1YV010, FA-ATSVM1YA020, FA-ATSVM1YA420, FA-ATNDM5

As the external power supply for connectable devices, use the power supply that meets the following requirements: LVLC (voltage and current limited circuit) of UL 508, SELV (Safety Extra-Low Voltage) circuit, LIM (Limited Energy Circuit). The pass-through module is not supported.

For additional information on connectable devices, please consult your local Mitsubishi Electric representative.

## Relevant Manuals

The following manual describes the details of the products. Please read it carefully and develop familiarity with the functions and performance of the product to handle it correctly. Please consult your local Mitsubishi Electric representative, if necessary.

Manual [manual number]	Available form
CC-Link Interface Module User's Manual (Detailed Edition) [50D-FG0456]	Print book PDF

## Packing List

Check that the following items are included in the package.

Item	Quantity
CC-Link interface module	1
Mounting bracket	2
Terminating resistor kit	110Ω, 1/2W: 2 130Ω, 1/2W: 2
CC-Link Interface Module User's Manual (Hardware Edition) (this manual)	1
Precautions for Use (Chinese)	1

## General Specifications

Item	Specifications
Operating ambient temperature	0 to 55°C
Storage ambient temperature	-25 to 75°C
Operating ambient humidity	5 to 95%RH, non-condensing
Vibration resistance	Frequency: 5 to 8.4Hz, 8.4 to 150Hz Constant acceleration: —, 9.8m/s <sup>2</sup> Half amplitude: 3.5mm, — Number of sweeps: 10 times each in the X, Y, and Z directions
Shock resistance	147m/s <sup>2</sup> , 3 times each in the X, Y, and Z directions
Operating atmosphere	No corrosive gases
Operating altitude <sup>3</sup>	0 to 2000m
Installation location	Inside a control panel <sup>4</sup>
Overvoltage category <sup>1</sup>	II or lower
Pollution degree <sup>2</sup>	2 or less

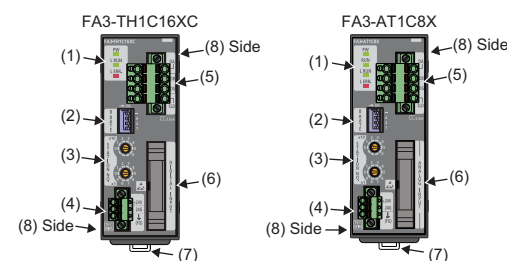
<sup>1</sup> This indicates the assumption that the equipment is connected to a power distribution system, ranging from a public electrical power distribution network down to machinery within the premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for equipment with the rated voltage up to 300V is 2500V.

<sup>2</sup> This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. In pollution degree 2, only non-conductive pollution occurs. A temporary conductivity caused by condensation must be expected occasionally.

<sup>3</sup> Do not use or store the module under pressure higher than the atmospheric pressure at an altitude of 0 meters. Doing so may cause malfunction. When using the module under pressure, please consult your local Mitsubishi Electric representative.

<sup>4</sup> Install the module in a control panel that satisfies both of the following: a protection degree of IP20, UL50 Type 1 or higher. Design the control panel suitable for the environment if necessary.

## Part Names



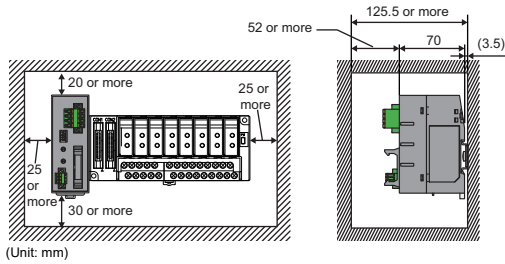
No.	Name	Description
(1)	Operating status LED	PW LED On: Power-on Off: 24VDC power supply shut off
		RUN LED (FA3-AT only) On: In normal operation Flashing (0.5s interval): Time average/Count average error Off: Watchdog timer error
		L RUN LED On: In normal communications Off: Communication cutoff (timeout error)
		L ERR. LED On: Transmission speed or station number not within the range Flashing regularly: Transmission speed or station number at power-on changed Flashing irregularly: Terminating resistor not installed, or module or CC-Link dedicated cable affected by noise Off: In normal communications
(2)	Transmission speed setting switch	Set the transmission speed. <sup>1</sup>
(3)	Station number setting switch	Set the station number. <sup>1</sup>
(4)	Terminal block for module power supply and FG	A terminal block for the connection of a module power supply (24VDC) and FG
(5)	Terminal block for the CC-Link system	A terminal block to connect the CC-Link system
(6)	Connector for digital signal converter (terminal module) or analog signal converter	A connector to connect the digital signal converter (terminal module) or analog signal converter
(7)	DIN rail hook	A hook for mounting a D/A converter module on a DIN rail
(8)	Hole for the mounting bracket	Holes to install the bracket

<sup>1</sup> For the setting method, refer to CC-Link Interface Module User's Manual (Detailed Edition).

## Installation of CC-Link Interface Module

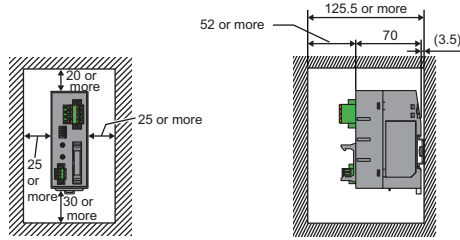
The module can be installed in five orientations by using DIN rails or mounting brackets for the CC-Link connector. (The module cannot be installed downward.) Consider sufficiently operability, maintainability, and environmental resistance, and then, install the CC-Link interface module in a control panel apart from the surrounding structures and modules (other than the digital signal converter (terminal module) and analog signal converter) as shown below.

### When using the dedicated cable



(Unit: mm)

### When using the signal converter connection extension cable

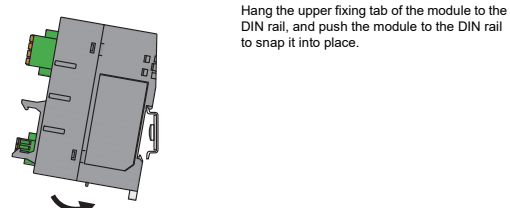


(Unit: mm)

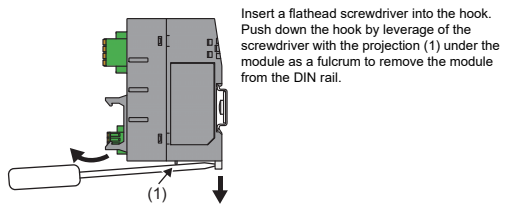
### Installing the module on a DIN rail

- Use the DIN rail of TH35-7.5Fe or TH35-7.5Al (compliant with JIS C 2812).
- Fix a DIN rail using mounting screws at intervals of 200mm or less.

#### Installation procedure

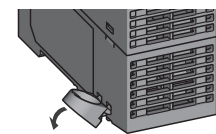


#### Removal procedure

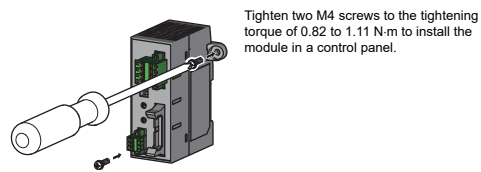


## Installing the bracket

### Installation procedure



Install the bracket to the module. Tilt the bracket and insert its projection parts into the holes of the module. Press down the bracket in the direction shown by the arrow to snap it into place.



## Connection to Digital Signal Converter (Terminal Module) or Analog Signal Converter

Connect between the FA3-TH and digital signal converter (terminal module) or between the FA3-AT and analog signal converter using the interface module cables. Set the notched edge of connector and push the connector for the interface module cable into the module connector. Insert the connector to the end to fix the cable securely.

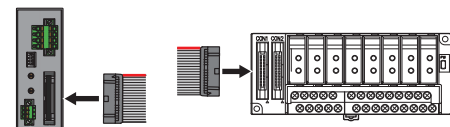
The interface module cables do not have electrical connection polarity.

### Interface module cable

Interface module cables for connecting the CC-Link interface module to connectable devices are as shown below.

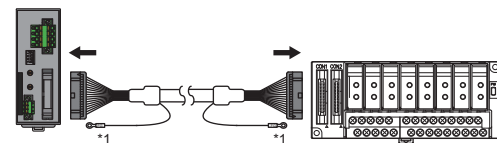
Item	Model	Length	Description
Dedicated cable	—	85mm	Included in the package with "01C" appended to the model name of this module
Signal converter connection extension cable	FA3-CB2L10MM1H20	1.0m	Sold separately
	FA3-CB2L20MM1H20	2.0m	
	FA3-CB2L30MM1H20	3.0m	

### When using the dedicated cable



When using an analog signal converter, connect the dedicated cable to CON1.

### When using the signal converter connection extension cable



When using an analog signal converter, connect the signal converter connection extension cable to CON1.  
 \*1 Wire the FG line of the cable as below.  
 FA3-TH: Make a gap not to ground the FG line to the control panel (both ends).  
 FA3-AT: Ground the FG line to the control panel (both ends).

## CC-Link Dedicated Cables and Power Cables

### CC-Link dedicated cable

The available CC-Link dedicated cable is shown below.

- CC-Link dedicated cable (Ver.1.00-compatible) (FANC-SB, FA-CBL200SB)
- CC-Link dedicated high-performance cable (Ver.1.00-compatible) (FANC-SBH, FA-CBL200SBH)
- Ver.1.10-compatible CC-Link dedicated cable (FANC-110SBH, CS-110, FA-CBL200PSBH)

### Wires for module power supply and FG

The following table lists the suitable wire for connection to the module power supply and FG.

Diameter	Type	Material	Temperature rating
0.14 to 1.5mm <sup>2</sup> (26 to 16 AWG)	Stranded wire or solid wire	Copper	75°C or higher

## Ferrule Solderless Terminal



Strip the coating from the end of the wire, and install a ferrule solderless terminal to the stripped part. For the length to strip, refer to the specifications of the ferrule solderless terminal to be used.

If the coating is stripped too long, the conductive part protrudes to the front of the connector, resulting in the risk of electric shock or short circuit between terminals. If the coating is stripped too short, contact failure can occur.

The following table lists the reference products of ferrule solderless terminals and crimping tools.

### Solderless terminal for the CC-Link dedicated cable

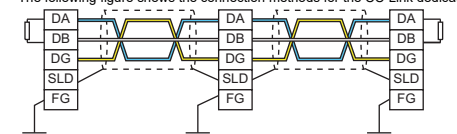
Model (sleeve length)	Target wire	Crimping tool	Manufacturer
AI 0.5-10 WH (10mm)	Signal line	CRIMPFOX6	PHOENIX CONTACT GmbH & Co. KG
AI 0.5-8 WH (8mm)	Signal line		
AI 2.5-10 BU (10mm)	Shielded cable	206-1204	WAGO Kontakttechnik GmbH & Co. KG
AI 2.5-8 BU (8mm)	Signal line		

### Solderless terminal of wires for the module power supply and FG

Model (sleeve length)	Applicable wire size	Crimping tool	Manufacturer
AI 0.34-10 TQ (10mm)	0.34mm <sup>2</sup> (22 AWG)	CRIMPFOX6	PHOENIX CONTACT GmbH & Co. KG
AI 0.34-8 TQ (8mm)	0.34mm <sup>2</sup> (22 AWG)		
AI 0.5-10 WH (10mm)	0.5mm <sup>2</sup> (20 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
AI 0.5-8 WH (8mm)	0.5mm <sup>2</sup> (20 AWG)		
A 0.5-10 (10mm)	0.5mm <sup>2</sup> (20 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
A 0.5-8 (8mm)	0.5mm <sup>2</sup> (20 AWG)		
A 0.75-10 (10mm)	0.75mm <sup>2</sup> (18 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
A 0.75-8 (8mm)	0.75mm <sup>2</sup> (18 AWG)		
A 1-10 (10mm)	1.0mm <sup>2</sup> (18 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
A 1-8 (8mm)	1.0mm <sup>2</sup> (18 AWG)		
A 1.5-10 (10mm)	1.5mm <sup>2</sup> (16 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
216-302 (8mm)	0.34mm <sup>2</sup> (24 to 22 AWG)		
216-201 (8mm)	0.5mm <sup>2</sup> (22 to 20 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
216-201 (8mm)	0.5mm <sup>2</sup> (22 to 20 AWG)		

## Wiring with the CC-Link Dedicated Cables

The following figure shows the connection methods for the CC-Link dedicated cable.



- Connect the CC-Link dedicated shielded cable (both ends) to the SLD terminal of each module and ground the cable with a ground resistance of 100 ohms or less through the FG terminal. SLD and FG are connected inside the module.
- Connect the terminating resistor between DA and DB of the module on each end of the data link. Terminating resistors are provided with the master module and the CC-Link interface module.
- Do not use the Ver.1.10-compatible CC-Link dedicated cable, CC-Link dedicated cable (Ver.1.00-compatible), and CC-Link dedicated high-performance cable (Ver.1.00-compatible) in combination. Doing so can cause abnormal data transmission. Connect the terminating resistor corresponding to the cable.
- Before processing and laying the CC-Link cable, check the Cable Wiring Manual (CC0811-06) of CC-Link Partner Association.

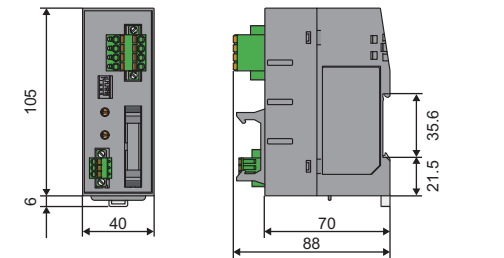
## Wiring

Confirm that all phases of the external power supply used in the system are shut off in advance.

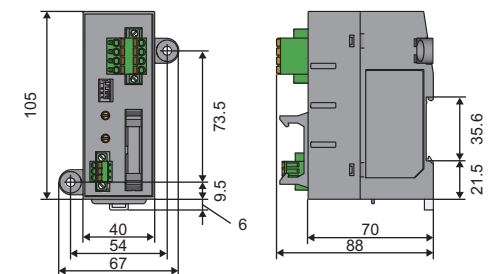
Insert and push the wire into the wire insertion opening. Pull the wire lightly to check that the wire is securely clamped.

For the precautions on wiring, refer to CC-Link Interface Module User's Manual (Detailed Edition).

## External Dimensions



(Unit: mm)



(Unit: mm)

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Please confirm the following warranty details before using this product.

1. Gratis warranty period and gratis warranty range  
 If any fault or defect (hereinafter referred to as "failure") attributable to Mitsubishi Electric Engineering Company Limited (hereinafter referred to as "MEE") should occur within the gratis warranty period, MEE shall repair the product free of charge via the representative from whom you purchased the product.

[Gratis warranty period]  
 The gratis warranty period of this product shall be one year from the date of purchase or delivery to the designated place.

Note that the gratis warranty period shall be limited to 18 months after manufacturing, which includes six months as the distribution period in the market.

In addition, the gratis warranty period of the product after repair is the same as that of the product before repair.

[Gratis warranty range]  
 The gratis warranty range shall be valid only when the product is normally used according to the conditions, methods, and environment defined by the terms, precautions, and other descriptions given in the instruction manual, user's manual, and caution labels on the product.

2. Warranty period after production discontinuation  
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