

CC-Link I/O MODULE

(NPN transistor output, 8 points each, one-touch connector)

MODEL R7F4DC-DC8A-J

BEFORE USE

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Discrete output module.....(1)
DIN rail mouser slider.....(2)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

■ CSP+ file

CSP+ file is downloadable at M-System's web site (<https://www.m-system.co.jp>) or CC-Link Partner Association's web site (<https://www.cc-link.org>).

POINTS OF CAUTION

■ CONFORMITY WITH EU DIRECTIVES

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures* to ensure the CE conformity.

* For example, installation of noise filters and clamp filters for the power source, input and output connected to the unit, etc.

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
24V DC rating: 24V \pm 10%, approx. 30 mA

■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply and output signal for safety.
- Before you remove the connector or mount it, make sure to turn off the power supply and output signal for safety.
- DO NOT set the switches on the module while the power is supplied. The switches are used only for maintenance without the power.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.
- With vertical mounting, for heat dissipation leave at least 10 mm (.39 in.) at the both side of the unit.

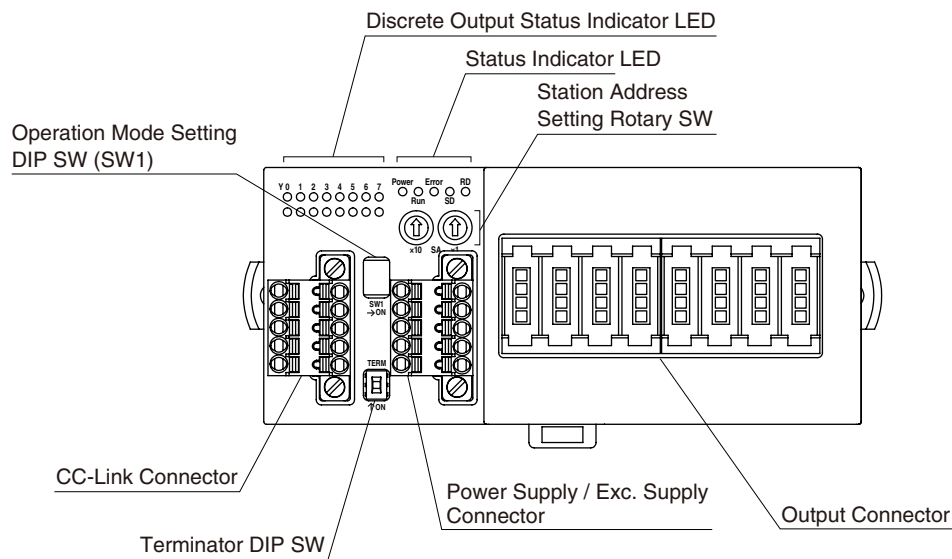
■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION



■ STATUS INDICATOR LED

| ID | COLOR | FUNCTION |
|-------|-------|--|
| Power | Green | ON when internal 5V power is in normal status. |
| Run | Green | ON when the communication is normal*1 |
| Error | Red | ON when the received data is abnormal. |
| SD | Green | ON when the module is transmitting. |
| RD | Green | ON when the module is receiving. |

*1. Run LED turns off when no command is received from the master device.

■ DISCRETE OUTPUT STATUS INDICATOR LED

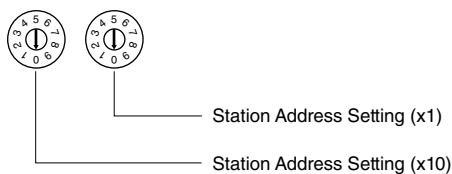
Green LED shows the output status.

ON : LED ON
OFF : LED OFF

■ STATION ADDRESS

The left switch determines the tenth place digit, while the right one does the ones place digit of the station address (1 - 64).

(Factory setting: 00)



■ OPERATING MODE

(*) Factory setting

• Baud Rate (SW1-1, 1-2, 1-3)

Baud Rate is selected with the DIP switch

| BAUD RATE | SW1 | | |
|--------------|-----|-----|-----|
| | 1 | 2 | 3 |
| 156 kbps (*) | OFF | OFF | OFF |
| 625 kbps | ON | OFF | OFF |
| 2.5 Mbps | OFF | ON | OFF |
| 5 Mbps | ON | ON | OFF |
| 10 Mbps | OFF | OFF | ON |

• Output at the Loss of Communication (SW1-4)

| OUTPUT AT THE LOSS OF COMMUNICATION | SW1 |
|--|-----|
| | 4 |
| Output clear (output OFF) | OFF |
| Hold the output (*) (maintains the last data received normally) | ON |

■ TERMINATING RESISTOR

To use the terminating resistor, turn the switch ON, and OFF to invalidate. (Factory setting OFF)

■ STATUS INDICATOR LED

| PWR | RUN | ERR | SD *1 | RD | STATUS *2 |
|-----|-----|-----|-------|--------|--|
| ON | ON | BL | BL | ON | Communicates normally with occasional CRC errors due to noise interference. |
| ON | ON | BL | BL | ON | Communicates normally but the Baud Rate and/or Station Address switches failed. ERR LED blinks approximately in 0.5 seconds intervals. |
| ON | ON | BL | BL | OFF | ---- |
| ON | ON | BL | OFF | ON | CRC error detected in the received data. Unable to respond. |
| ON | ON | BL | OFF | OFF | ---- |
| ON | ON | OFF | BL | ON | Normal communication |
| ON | ON | OFF | BL | OFF | ---- |
| ON | ON | OFF | OFF | ON | Unable to receive data addressed to the station. |
| ON | ON | OFF | OFF | OFF | ---- |
| ON | OFF | BL | BL | ON | Polling response is made but CRC error is detected in received refresh data. |
| ON | OFF | BL | BL | OFF | ---- |
| ON | OFF | BL | OFF | ON | CRC error detected in the data addressed to the station. |
| ON | OFF | BL | OFF | OFF | ---- |
| ON | OFF | OFF | BL | ON | Link is not started. |
| ON | OFF | OFF | BL | OFF | ---- |
| ON | OFF | OFF | OFF | ON | No data addressed to the station. Or unable to receive data addressed to the station due to noise interference. (Missing parts of the data sent from the master) |
| ON | OFF | OFF | OFF | OFF | Unable to receive data due to wire breakdown |
| ON | OFF | ON | OFF | ON/OFF | Faulty Baud Rate and/or Station Address setting |
| OFF | OFF | OFF | OFF | OFF | Power input removed or power supply failure. |

OFF = OFF, ON = ON, BL = Blinking

*1. SD LED which is blinking may appear to be ON with high baud rate especially when fewer modules are connected.

*2. LED combinations indicated with "----" do not occur in normal operation unless LED failure or the like occurs.

■ TERMINAL ASSIGNMENTS

• CC-Link, Power Supply, Exc. Supply Assignment

Unit side connector: MCV1,5/5-GF-3,5 (Phoenix contact)

Cable side connector: TFMC1,5/5-STF-3,5 (Phoenix contact)

Applicable wire size: 0.2 - 1.5mm²

Stripped length: 10mm

Recommended solderless terminal:

AI0,25-10YE 0.25mm² (Phoenix contact)

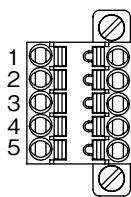
AI0,34-10TQ 0.34mm² (Phoenix contact)

AI0,5-10WH 0.5mm² (Phoenix contact)

AI0,75-10GY 0.75mm² (Phoenix contact)

AI1-10 1.0mm² (Phoenix contact)

AI1,5-10 1.5mm² (Phoenix contact)



• CC-Link

| PIN NO. | ID | FUNCTION |
|---------|-----|----------------|
| 1 | FE | Function earth |
| 2 | SLD | Shield |
| 3 | DB | DB |
| 4 | DG | DG |
| 5 | DA | DA |

Note: The numbers marked on the connector have no relationship to the pin number of the unit. Wire according to the instruction manual of the unit.

• POWER SUPPLY / EXC. SUPPLY

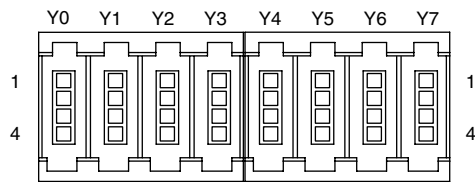
| PIN NO. | ID | FUNCTION |
|---------|-----------|----------------|
| 1 | PWR+ | Power supply + |
| 2 | PWR- | Power supply - |
| 3 | FE1 | Grounding |
| 4 | SNSR.EXC+ | Exc. supply + |
| 5 | SNSR.EXC- | Exc. supply - |

• Output Terminal Assignment

Unit side connector: 33216-62M3 PL (3M Company)

Cable side connector: 33104-6()00 FL (3M Company)

(The cable connector is not included in the package. Specify wire size instead of (); refer to the specifications of the product)



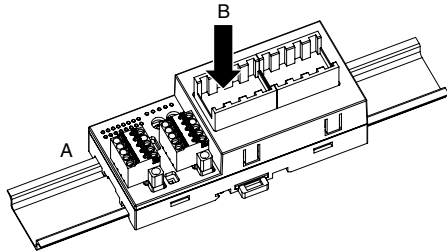
| PIN NO. | ID | FUNCTION | PIN NO. | ID | FUNCTION |
|---------|----|-------------|---------|----|-------------|
| Y0 | 1 | Y0 Output 0 | Y4 | 1 | Y4 Output 4 |
| | 2 | NC Unused | | 2 | NC Unused |
| | 3 | +24V 24V DC | | 3 | +24V 24V DC |
| | 4 | NC Unused | | 4 | NC Unused |
| Y1 | 1 | Y1 Output 1 | Y5 | 1 | Y5 Output 5 |
| | 2 | NC Unused | | 2 | NC Unused |
| | 3 | +24V 24V DC | | 3 | +24V 24V DC |
| | 4 | NC Unused | | 4 | NC Unused |
| Y2 | 1 | Y2 Output 2 | Y6 | 1 | Y6 Output 6 |
| | 2 | NC Unused | | 2 | NC Unused |
| | 3 | +24V 24V DC | | 3 | +24V 24V DC |
| | 4 | NC Unused | | 4 | NC Unused |
| Y3 | 1 | Y3 Output 3 | Y7 | 1 | Y7 Output 7 |
| | 2 | NC Unused | | 2 | NC Unused |
| | 3 | +24V 24V DC | | 3 | +24V 24V DC |
| | 4 | NC Unused | | 4 | NC Unused |

MOUNTING INSTRUCTIONS

■ DIN RAIL MOUNTING (PARALLEL)

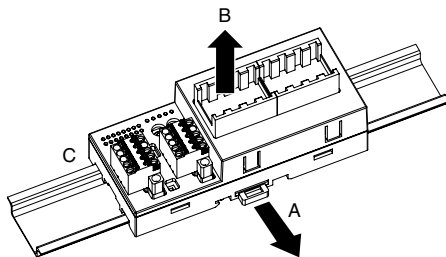
• Mounting

- A) Set the upper hook at the rear side of the unit on the DIN rail.
- B) Push in the lower.



• Dismounting

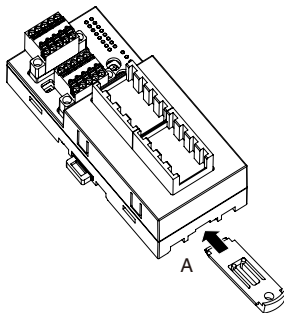
- A) Push down the DIN rail mounter slider with tip of a minus screwdriver.
- B) Pull the lower of the unit.
- C) Remove the upper hook of the unit from the DIN rail.



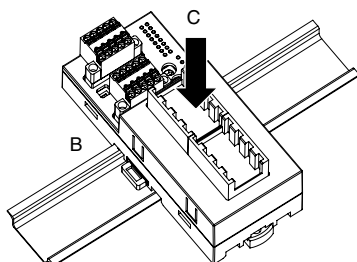
■ DIN RAIL MOUNTING (RIGHT ANGLE)

• Mounting

- A) Insert the longer DIN rail mounter slider until it clicks twice, as shown below.

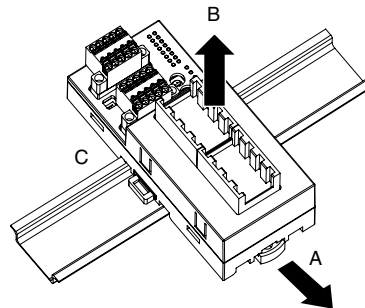


- B) Set the upper hook at the rear side of the unit on the DIN rail.
- C) Push in the lower.



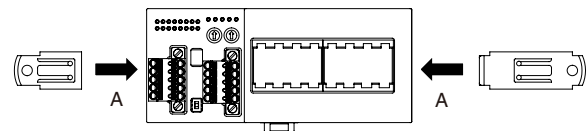
• Dismounting

- A) Push down the DIN rail mounter slider with tip of a minus screwdriver.
- B) Pull the lower of the unit.
- C) Remove the upper hook of the unit from the DIN rail.

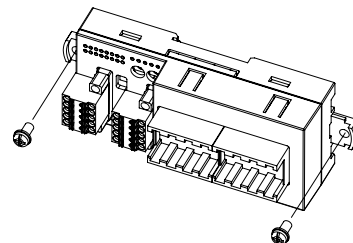


■ SURFACE MOUNTING

- A) Insert the two DIN rail mounter sliders until it clicks once, as shown below.



- B) Mount the unit with M4 screws referring the External Dimensions. (Torque: 1.4 N·m)

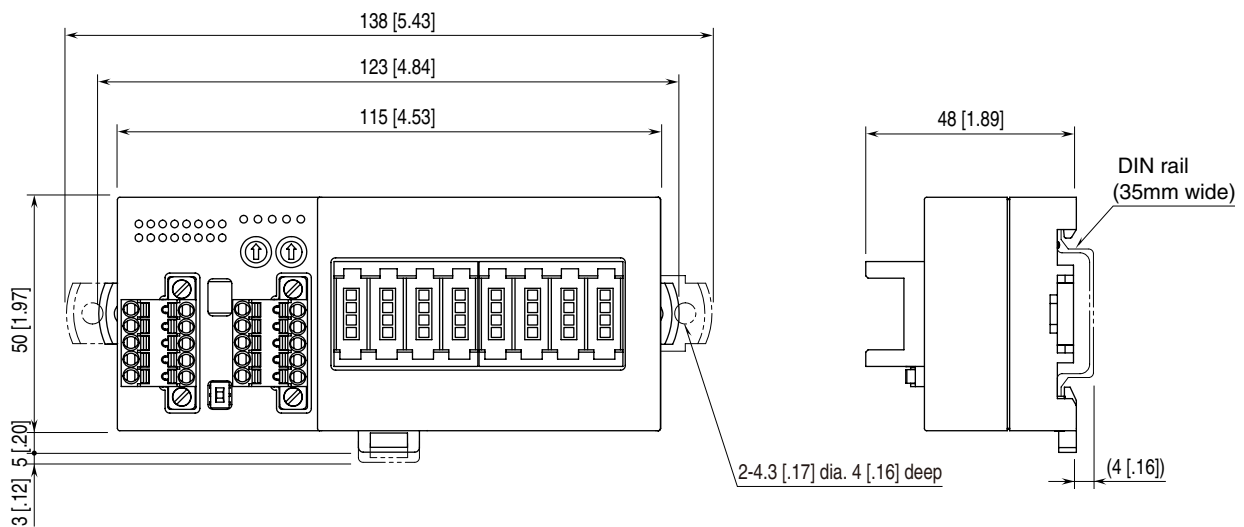


Note: leave at least 10 mm (.39 in.) at the both side of the unit.

TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

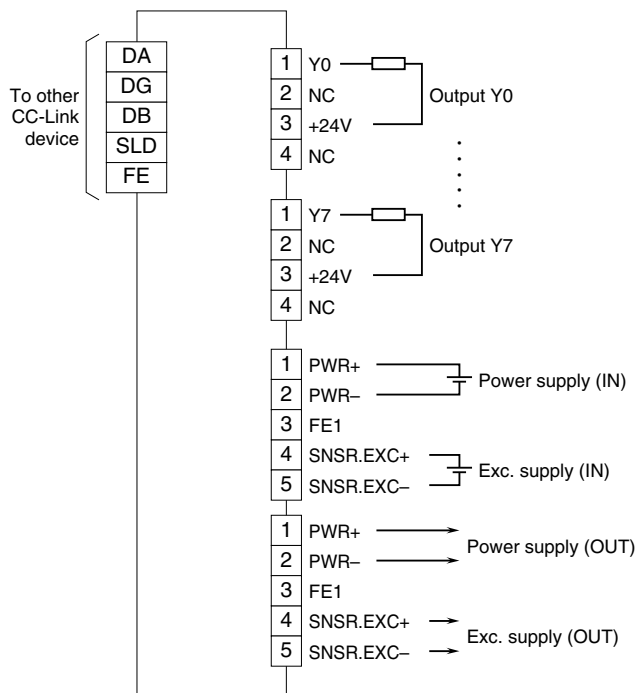
EXTERNAL DIMENSIONS unit: mm [inch]



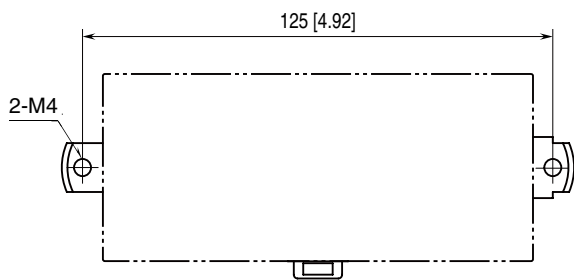
CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE1 terminal to ground.

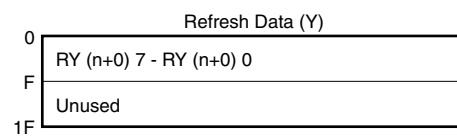
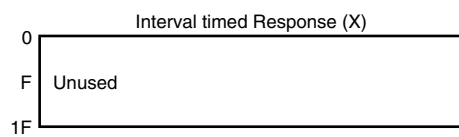
Caution: FE1 terminal is NOT a protective conductor terminal.



MOUNTING REQUIREMENTS unit: mm [inch]

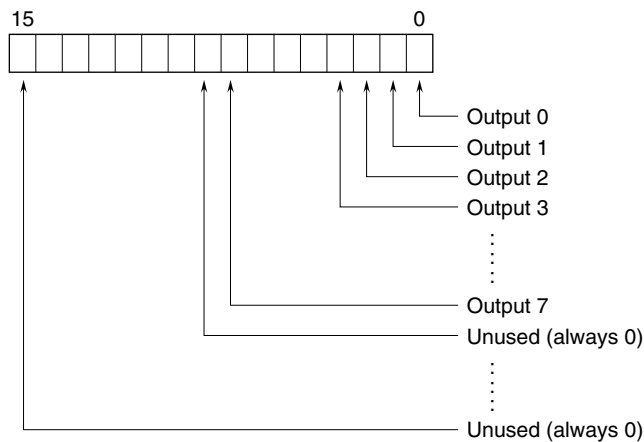


DATA ALLOCATION



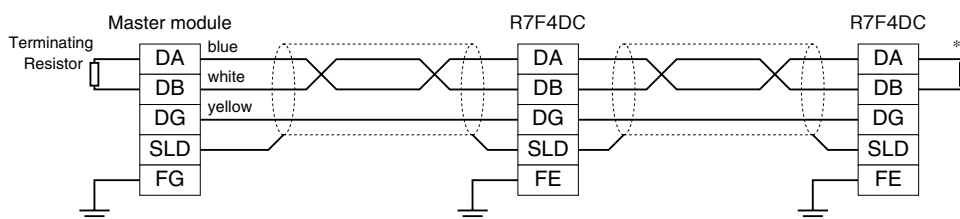
I/O DATA DESCRIPTIONS

DISCRETE OUTPUT



COMMUNICATION CABLE WIRING

MASTER CONNECTION



*1. Turn on the terminator DIP switch to activate the internal terminating resistor.