

**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)

**■ 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.

**POINTS OF CAUTION****■ POWER INPUT RATING & OPERATIONAL RANG**

- Locate the power input rating marked on the product and confirm its operational range as indicated below:  
24V DC rating: 24V  $\pm$ 10%, approx. 60mA

**■ GENERAL PRECAUTIONS**

- Before you remove the unit or mount it, 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.

**■ WIRING**

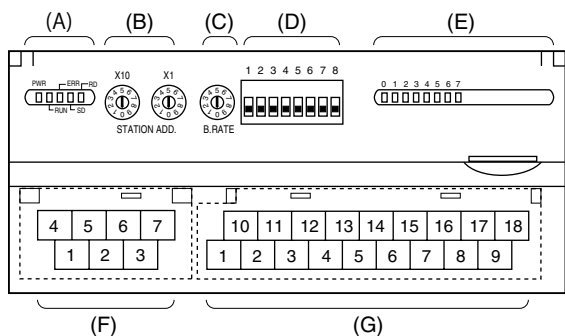
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

**■ AND ....**

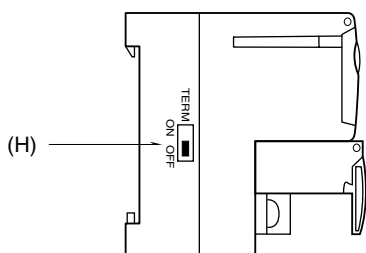
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

# COMPONENT IDENTIFICATION

## FRONT VIEW



## SIDE VIEW



- (A) Status Indicator LED \*1
- (B) Station Address Setting Rotary SW
- (C) Baud Rate Setting Rotary SW
- (D) Operating Mode Setting DIP SW (SW1)
- (E) Discrete Output Status Indicator LED
- (F) CC-Link, Power Supply Terminals
- (G) Output Terminals
- (H) Terminating Resistor SW

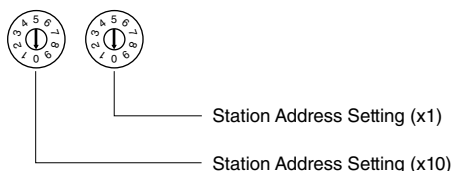
\*1. Refer to 'Status Indicator LED' section for detailed information.

## STATUS INDICATOR LED

ID	COLOR	FUNCTION
PWR	Red	Turns on when the internal 5V is supplied normally.
RUN	Red	Turns on when the refresh data is received normally.
ERR	Red	Turns on when the received data is abnormal.
SD	Red	Turns on when the module is transmitting.
RD	Red	Turns on when the module is receiving.

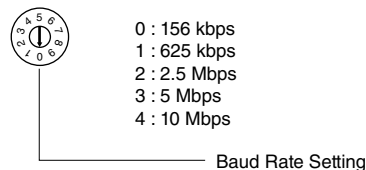
## STATION ADDRESS

Station Address is selected between 1 and 64 in decimal. The left switch determines the tenth place digit, while the right switch does the ones place digit of the address.



## BAUD RATE

Baud Rate is selected with the rotary switch.



## OPERATING MODE

(\*) Factory setting

### Extension (SW1-1, 1-2, 1-3, 1-4)

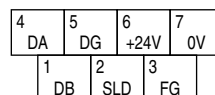
SW1-1	SW1-2	SW1-3	SW1-4	EXTENSION
OFF	ON	OFF	OFF	No extension (*)
OFF	ON	OFF	ON	Discrete output, 8 or 16 points

### Output at the loss of communication (SW1-5)

SW1-5	OUTPUT AT THE LOSS OF COMMUNICATION
OFF	Reset the output (turned off)
ON	Hold the output (*) (maintains the last data received normally)

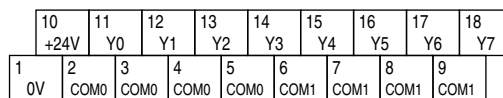
Note: Be sure to set unused SW1-6 through 1-8 to OFF.

## POWER SUPPLY, CC-LINK TERMINAL ASSIGNMENT



NO.	ID	FUNCTION, NOTES
1	DB	White
2	SLD	Shield
3	FG	FG
4	DA	Blue
5	DG	Yellow
6	+24V	Power input (24V DC)
7	0V	Power input (0V)

## OUTPUT TERMINAL ASSIGNMENT



NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	0V	0V	10	+24V	24V DC
2	COM0	Common 0	11	Y0	Output 0
3	COM0	Common 0	12	Y1	Output 1
4	COM0	Common 0	13	Y2	Output 2
5	COM0	Common 0	14	Y3	Output 3
6	COM1	Common 1	15	Y4	Output 4
7	COM1	Common 1	16	Y5	Output 5
8	COM1	Common 1	17	Y6	Output 6
9	COM1	Common 1	18	Y7	Output 7

## TERMINATING RESISTOR

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

## EXTENSION MODULE

Combinations with the R7C-EC8A, R7C-EC16A, R7C-EC8B, R7C-EC16B or R7C-EC8C are selectable.

## INDICATOR LED

### ■ 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 found 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	Performs the interval-timed responses but CRC error found in receiving the refresh data.
ON	OFF	BL	BL	OFF	----
ON	OFF	BL	OFF	ON	CRC error found 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 may look not blinking but ON with high baud rate and fewer connected modules.

\*2. LEDs indicated with "----" in STATUS rarely occurs in normal operation (LED failure or the like as possible cause).

### ■ DISCRETE OUTPUT STATUS INDICATOR LED

LED indicators show the signal status.

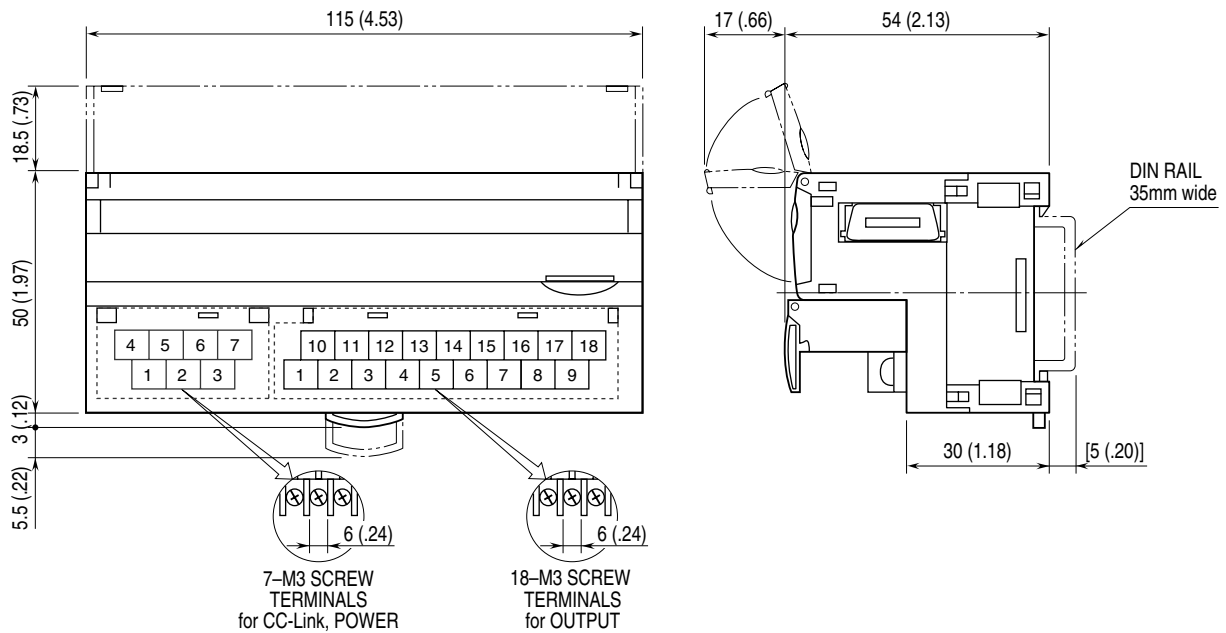
ON : LED ON

OFF : LED OFF

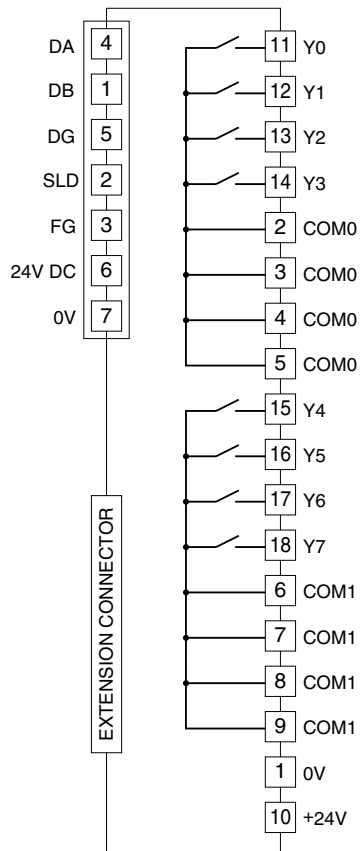
# TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

## EXTERNAL DIMENSIONS unit: mm (inch)



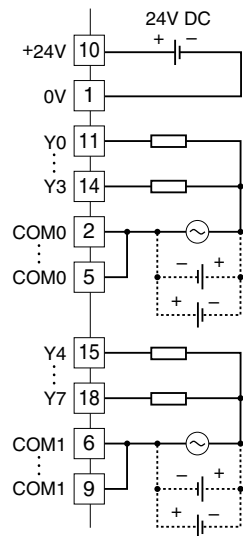
## CONNECTION DIAGRAM



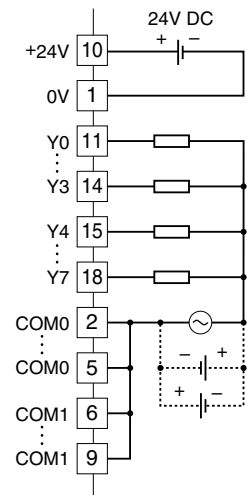
Caution: FG terminal is NOT a protective conductor terminal.

## Output Connection Example

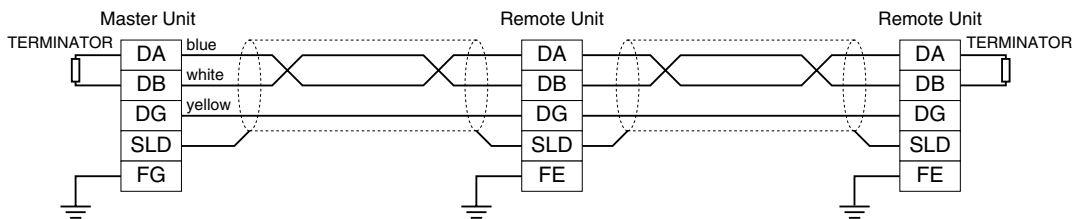
4 Points / common



8 Points / common



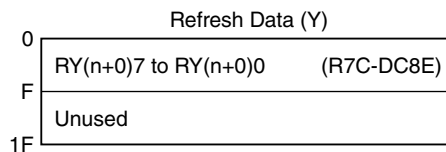
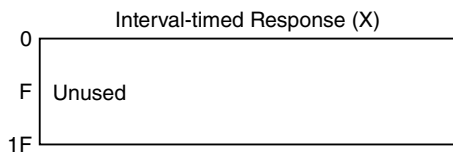
## COMMUNICATION CABLE CONNECTIONS



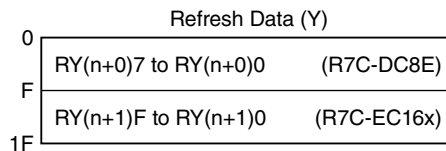
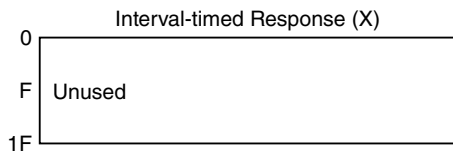
Be sure to connect the terminating resistor across DA and DB at both ends of communication line.  
 When this unit is located at an end, turn the terminating resistor SW ON.  
 The Master Unit can be located at not only both ends but also any node of the of communication line.

## DATA ALLOCATION

### ■ R7C-DC8E

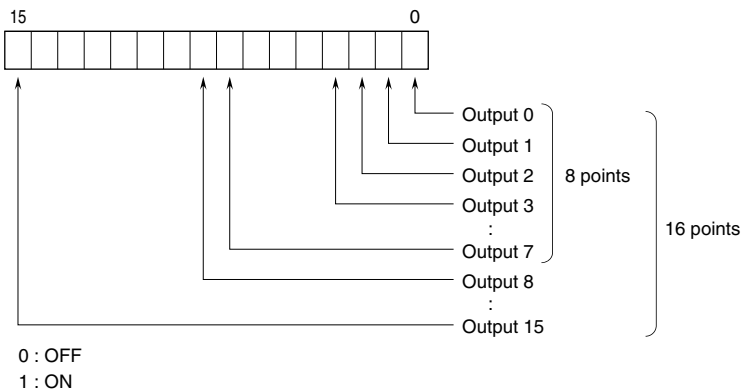


### ■ R7C-DC18E + R7C-EC16x



## I/O DATA DESCRIPTIONS

### ■ DISCRETE OUTPUT



## WIRING INSTRUCTIONS

### ■ SCREW TERMINAL

Torque: 0.5 N·m

### ■ SOLDERLESS TERMINAL

Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable.

Applicable wire size: 0.25 to 1.65 mm<sup>2</sup> (AWG 22 to 16)

Recommended manufacturer: Japan Solderless Terminal MFG. Co., Ltd, Nichifu Co., Ltd

