

**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:**

Remote control relay control module .....(1)

**■ MODEL NO.**

Confirm that the model number described on the product is 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 RANGE**

- Locate the power input rating marked on the product and confirm its operational range as indicated below:  
24V AC rating: 24V  $\pm$ 10%, 50/60Hz, approx. 140mA  
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.

**■ 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**

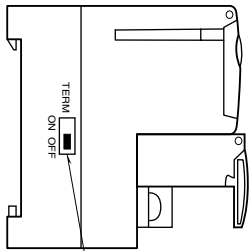
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

**■ 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.

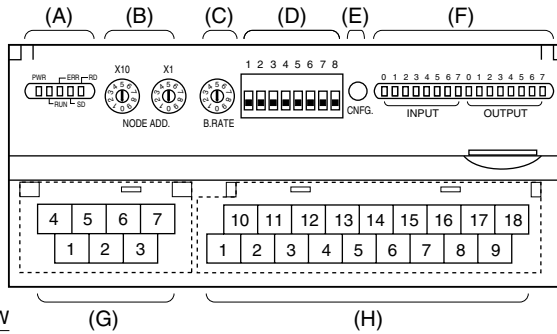
# COMPONENT IDENTIFICATION

## ■ SIDE VIEW



(I) Terminating Resistor SW

## ■ FRONT VIEW



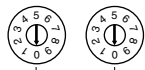
- (A) Status Indicator LED
- (B) Node Address Setting Rotary SW
- (C) Baud Rate Setting Rotary SW
- (D) Operating Mode Setting DIP SW (SW1)
- (E) PC Configurator Jack
- (F) I/O Status Indicator LED
- (G) Modbus, Power Supply Terminals
- (H) Output Terminals
- (I) Terminating Resistor SW

## ■ 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.

## ■ NODE ADDRESS

Node Address is selected between 1 and 99 in decimal. The left switch determines the tenths place digit, while the right switch does the ones place digit of the address.



Node Address Setting (x1)  
Node Address Setting (x10)

## ■ BAUD RATE

Baud Rate is selected with the rotary switch.



- 0: 38.4 kbps    5: 1200 bps
- 1: 19.2 kbps    6: 14.4 kbps
- 2: 9600 bps    7: 28.8 kbps
- 3: 4800 bps    8: 57.6 kbps
- 4: 2400 bps    9: 115.2 kbps

Baud Rate Setting

## ■ OPERATING MODE

### • Extension (SW1-1, 1-2)

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

(\*) Factory setting

Note : Be sure to set unused SW1-3 through 1-8 to OFF.

## ■ PC CONFIGURATOR

The following parameters can be set with using PC Configurator Software.

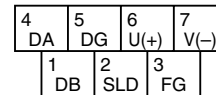
- Modbus parameters: Parity, bit length, stop bit

## ■ I/O STATUS INDICATOR LED

Output and feedback input status are indicated with LED.

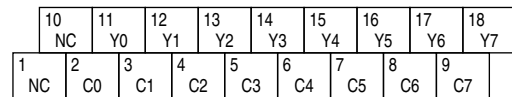
ON: LED on  
OFF: LED off

## ■ POWER SUPPLY, MODBUS TERMINAL ASSIGNMENT



- (1) DB -
- (2) SLD Shield
- (3) FG FG
- (4) DA -
- (5) DG -
- (6) U(+) Power input
- (7) V(-) Power input

## ■ OUTPUT TERMINAL ASSIGNMENT



NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	NC	No connection	10	NC	No connection
2	C0	Common	11	Y0	Output 0
3	C1	Common	12	Y1	Output 1
4	C2	Common	13	Y2	Output 2
5	C3	Common	14	Y3	Output 3
6	C4	Common	15	Y4	Output 4
7	C5	Common	16	Y5	Output 5
8	C6	Common	17	Y6	Output 6
9	C7	Common	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 all extension modules are available.

## I/O DATA DESCRIPTION

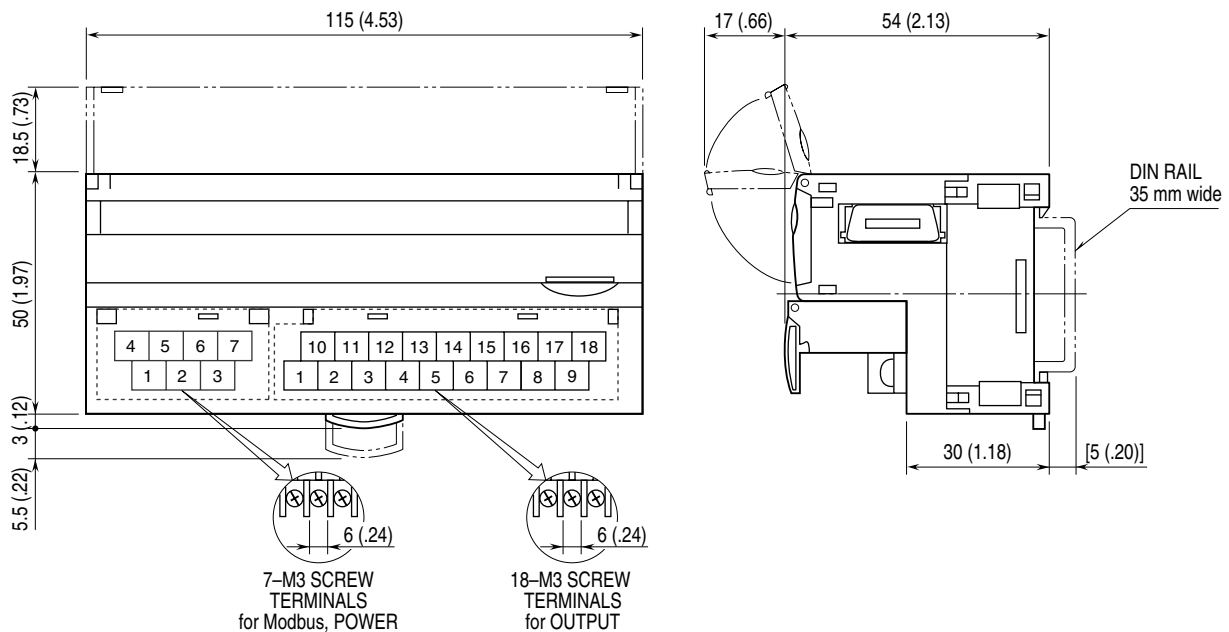
### ■ OUTPUT

BIT	CHANNEL	DATA	STATE
0	Y0	0	OFF Output
		1	ON Output
1	Y1	0	OFF Output
		1	ON Output
2	Y2	0	OFF Output
		1	ON Output
3	Y3	0	OFF Output
		1	ON Output
4	Y4	0	OFF Output
		1	ON Output
5	Y5	0	OFF Output
		1	ON Output
6	Y6	0	OFF Output
		1	ON Output
7	Y7	0	OFF Output
		1	ON Output
8	—	—	Invalid
9	—	—	Invalid
10	—	—	Invalid
11	—	—	Invalid
12	—	—	Invalid
13	—	—	Invalid
14	—	—	Invalid
15	—	—	Invalid

### ■ FEEDBACK INPUT

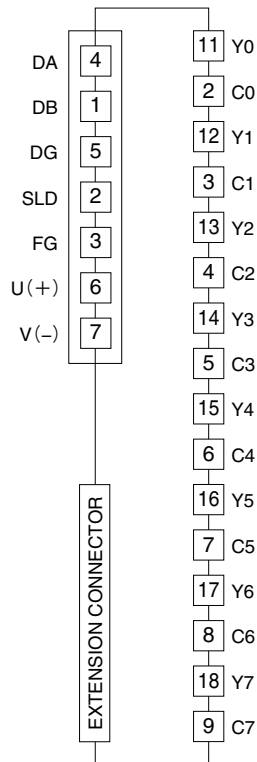
BIT	CHANNEL	DATA	STATE
0	Y0	0	OFF Output
		1	ON Output
1	Y1	0	OFF Output
		1	ON Output
2	Y2	0	OFF Output
		1	ON Output
3	Y3	0	OFF Output
		1	ON Output
4	Y4	0	OFF Output
		1	ON Output
5	Y5	0	OFF Output
		1	ON Output
6	Y6	0	OFF Output
		1	ON Output
7	Y7	0	OFF Output
		1	ON Output
8	—	—	Invalid
9	—	—	Invalid
10	—	—	Invalid
11	—	—	Invalid
12	—	—	Invalid
13	—	—	Invalid
14	—	—	Invalid
15	—	—	Invalid

## EXTERNAL DIMENSIONS unit: mm (inch)



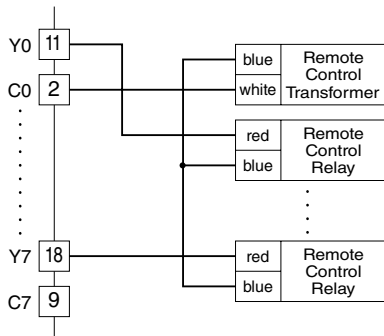
## CONNECTION DIAGRAM

Connect the unit as in the diagram below.



Caution: FG terminal is NOT a protective conductor terminal.

### Output Connection Example



## WIRING INSTRUCTIONS

### ■ SCREW TERMINAL

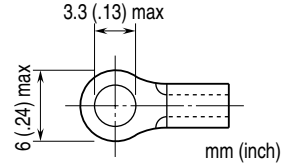
Torque: 0.5 N·m

### ■ SOLDERLESS TERMINAL mm (inch)

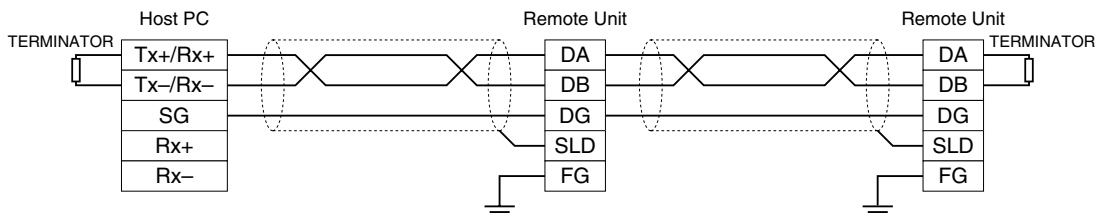
Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable.

Applicable wire size 0.25 to 1.65 mm<sup>2</sup> (AWG22 - 16)

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



## MASTER CONNECTION



Be sure to connect the terminating resistor included in the product package to the unit at both ends of transmission line.  
The terminator must be connected across DA and DB.  
The Host PC can be located other than at the extreme ends of transmission line.