

DISCRETE INPUT MODULE, 16 points (Modbus 115.2 kbps)

MODEL **R7M-DA16F**

BEFORE USE

Thank you for choosing us. 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 our sales office or representatives.

■ PACKAGE INCLUDES:

Discrete input 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

■ CONFORMITY WITH EU DIRECTIVES

- The actual installation environments such as panel configurations, connected devices and 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 CE conformity.

■ 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. 40mA

■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply and input 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

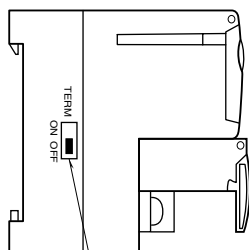
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ 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.

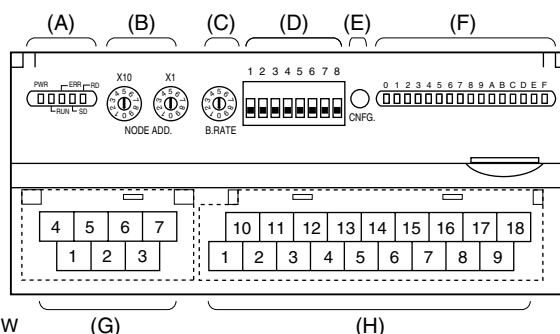
COMPONENT IDENTIFICATION

■ SIDE VIEW



(I) Terminating Resistor SW

■ FRONT VIEW



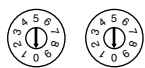
- (A) Status Indicator LED
- (B) Node Address Setting Rotary SW
- (C) Baud Rate Setting Rotary SW
- (D) Operating Mode Setting DIP SW (SW1)
- (E) PC Configurator Jack
- (F) Discrete Input Status Indicator LED
- (G) Modbus, Power Supply Terminals
- (H) Input Terminals
- (I) Terminating Resistor SW

■ 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
- 1: 19.2 kbps
- 2: 9600 bps
- 3: 4800 bps
- 4: 2400 bps
- 5: 1200 bps
- 6: 14.4 kbps
- 7: 28.8 kbps
- 8: 57.6 kbps
- 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.

• Output of the extension module at the loss of communication

Select “Output Clear (OFF)” or “Output Hold (factory default setting)” using the Configurator Software (model: R7CON).

• Output of the extension module when the communication is restored

(Ver1.xx)

“Output Clear”: The output is reset to off when the communication is restored. However, if a query instructs ON or OFF about output of the extension module when the communication is restored, the instructed content is output.

“Output Hold”: The output at the moment of communication loss is held.

(Ver2.xx or later)

“Output Clear”: The output value before the communication loss is output when the communication is restored. However, if a query instructs ON or OFF about output of the extension module when the communication is restored, the instructed content is output.

“Output Hold”: The output at the moment of communication loss is held.

■ POWER SUPPLY, MODBUS TERMINAL ASSIGNMENT

4	5	6	7
DA	DG	+24V	0V
1	2	3	
DB	SLD	FG	

- (1) DB —
- (2) SLD Shield
- (3) FG FG
- (4) DA —
- (5) DG —
- (6) +24V Power input (24V DC)
- (7) 0V Power input (0V)

■ INPUT TERMINAL ASSIGNMENT

10	11	12	13	14	15	16	17	18
COM	X1	X3	X5	X7	X9	XB	XD	XF
1	2	3	4	5	6	7	8	9
COM	X0	X2	X4	X6	X8	XA	XC	XE

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	COM	Common	10	COM	Common
2	X0	Input 0	11	X1	Input 1
3	X2	Input 2	12	X3	Input 3
4	X4	Input 4	13	X5	Input 5
5	X6	Input 6	14	X7	Input 7
6	X8	Input 8	15	X9	Input 9
7	XA	Input 10	16	XB	Input 11
8	XC	Input 12	17	XD	Input 13
9	XE	Input 14	18	XF	Input 15

■ EXTENSION MODULE

Combinations with all extension modules are available.

■ DISCRETE INPUT STATUS INDICATOR LED

LED indicators show the signal status.

ON : LED ON

OFF : LED OFF

■ PC CONFIGURATOR

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

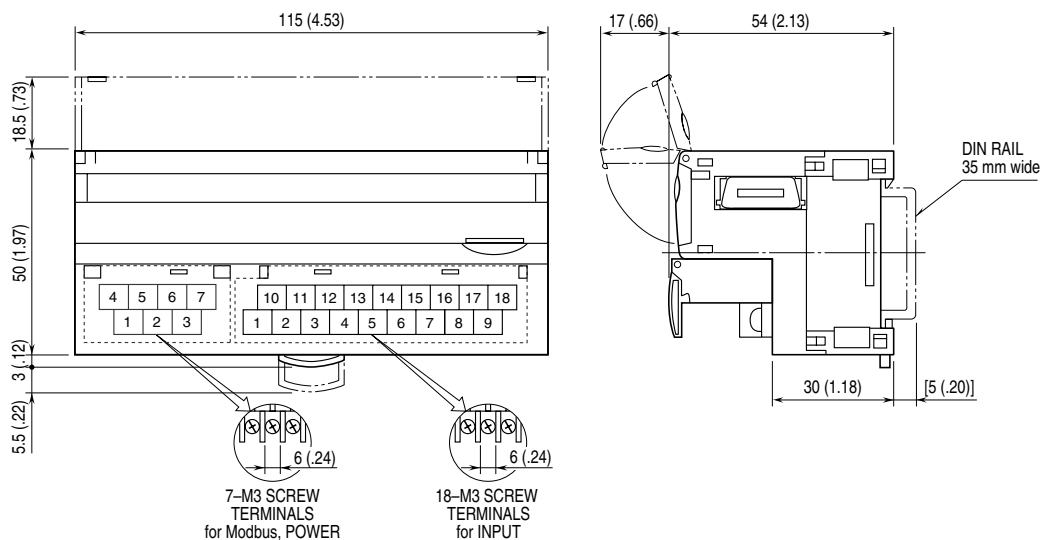
- Modbus parameters: Parity, bit length, stop bit

■ TERMINATING RESISTOR

To use the terminating resistor, turn the switch ON, and OFF to invalidate.

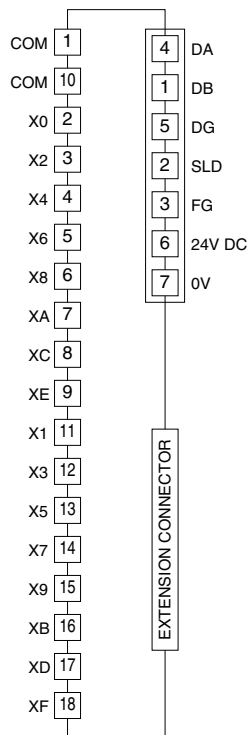
(Factory setting OFF)

EXTERNAL DIMENSIONS UNIT: MM (INCH)



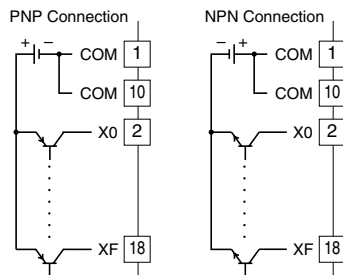
CONNECTION DIAGRAM

Connect the unit as in the diagram below.

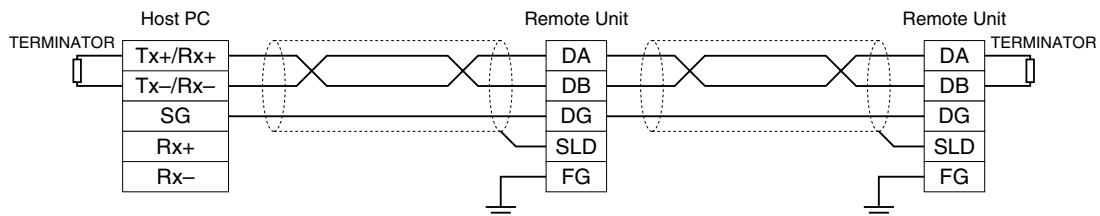


In order to improve EMC performance, bond the FG terminal to ground.
Caution: FG terminal is NOT a protective conductor terminal.

Input Connection Examples



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.

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 mm² (AWG22 - 16)

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

