

**MULTI-TRANSMISSION MODULE**

MODEL **22LA1**

**BEFORE USE ....**

Thank you for choosing us. Before use, check the package you received as below. If you have any problems or questions with the product, please contact our sales office or representatives.

■ **PACKAGE INCLUDES:**

Signal conditioner (body + base socket) ..... (1)

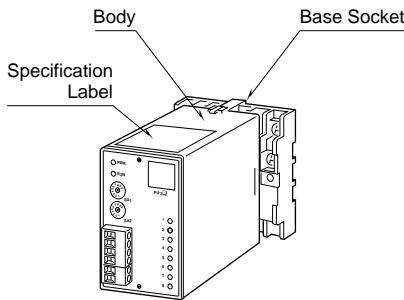
■ **MODEL NO.**

Check that model No. described on specification label is exactly what you ordered.

■ **INSTRUCTION MANUAL**

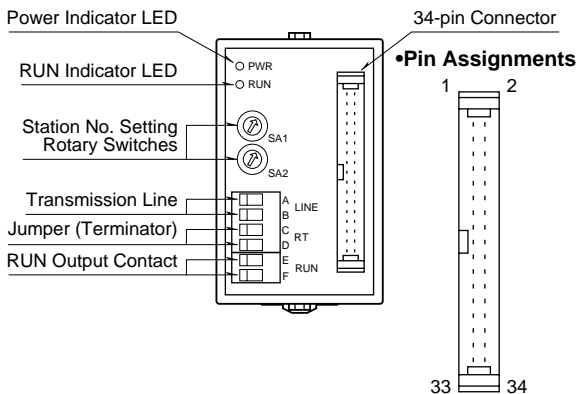
This manual describes necessary points of caution when you use this product, installation, connection and basic maintenance procedures.

**COMPONENT IDENTIFICATION**

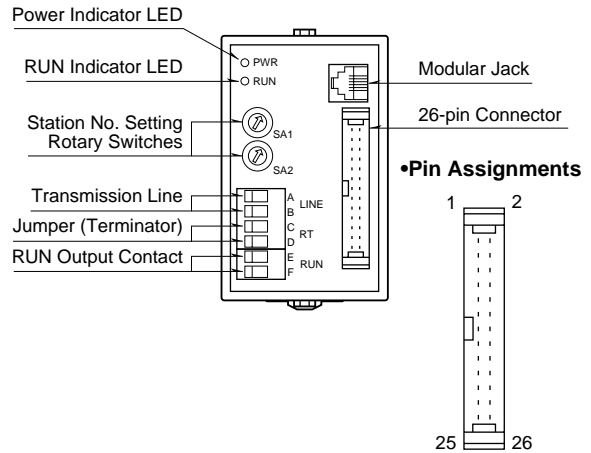


■ **FRONT PANEL CONFIGURATION**

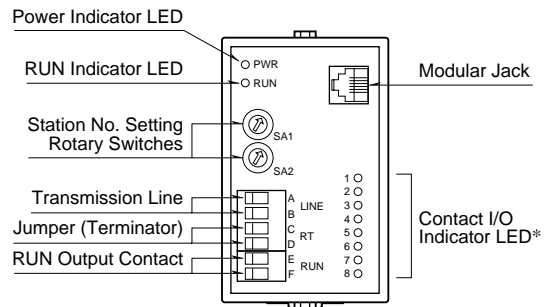
•22LA1-3A1, -3C1



•22LA1-3A2, -3C2



•Standard Type



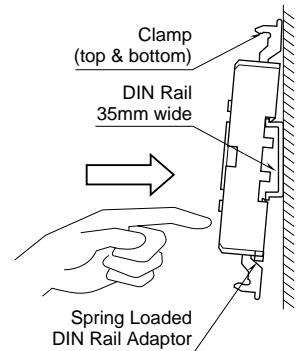
\*Deleted with analog I/O modules.  
LED5 through 8 deleted with the 22LA1-3P4 or -3U4.

**MOUNTING**

Detach the yellow clamps located at the top and bottom of the unit for separating the body from the base socket.

■ **DIN RAIL MOUNTING**

Set the base socket so that its DIN rail adaptor is at the bottom. Position the upper hook at the rear side of base socket on the DIN rail and push in the lower. When removing the socket, push down the DIN rail adaptor utilizing a screwdriver (-) and pull.



■ **WALL MOUNTING**

Refer to the drawing in the following page.

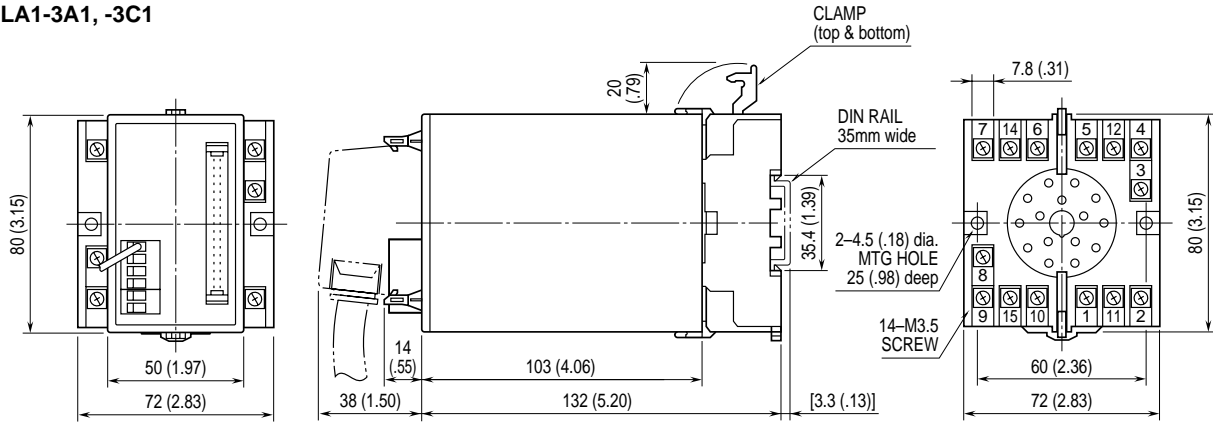
Shape and size of the base socket are slightly different with various socket types.

# TRANSMISSION SECTION CONNECTIONS

Connect the unit as in the diagram below.

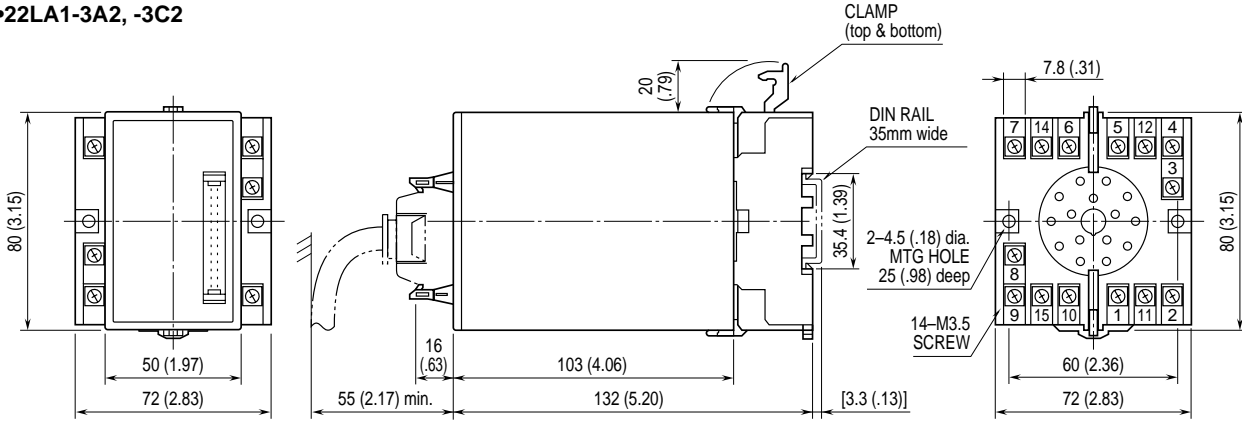
## EXTERNAL DIMENSIONS mm (inch)

### •22LA1-3A1, -3C1



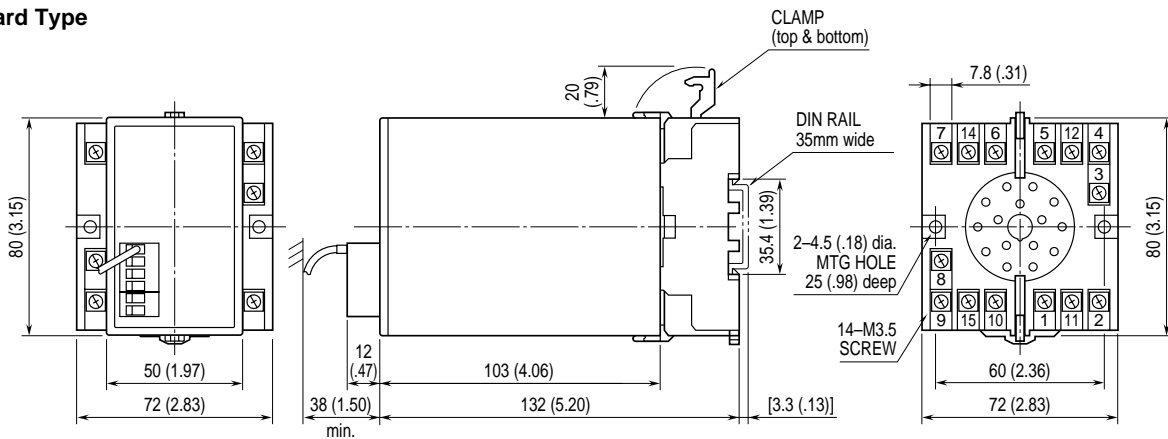
•When mounting, no extra space is needed between units.

### •22LA1-3A2, -3C2



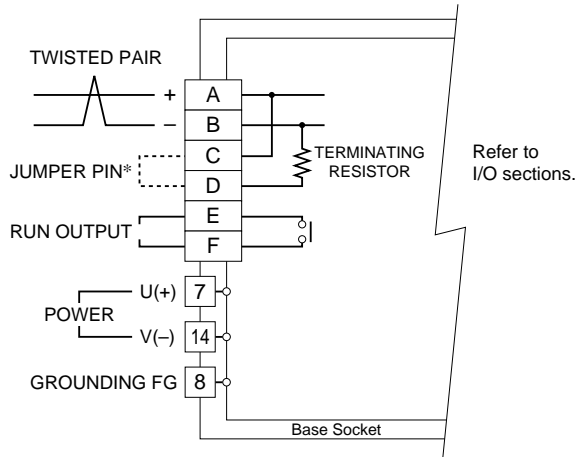
•When mounting, no extra space is needed between units.

### •Standard Type



•When mounting, no extra space is needed between units.

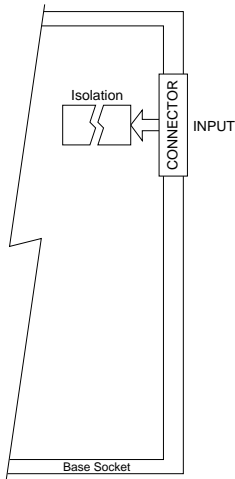
■ CONNECTION DIAGRAM



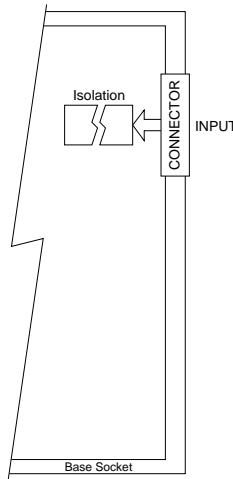
\*When the unit is located at the end of transmission line via twisted-pair cable (= no cross-wiring), short across the terminals C - D with the jumper pin (or wire) provided with the unit. Remove the jumper pin for the one not located at the end.

I/O SECTION CONNECTIONS

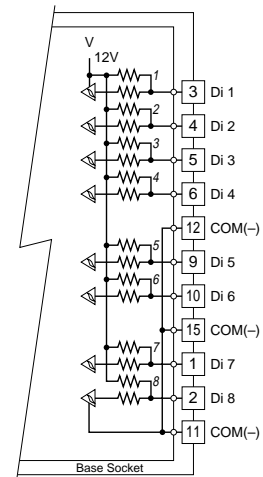
■ MODEL SUFFIX CODE: A1  
Contact Input (BCD)



■ MODEL SUFFIX CODE: A2  
Contact Input (BCD)

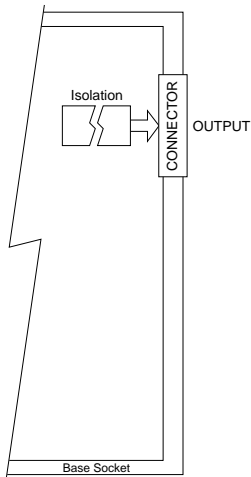


■ MODEL SUFFIX CODE: A4  
Contact Input (Di 8)

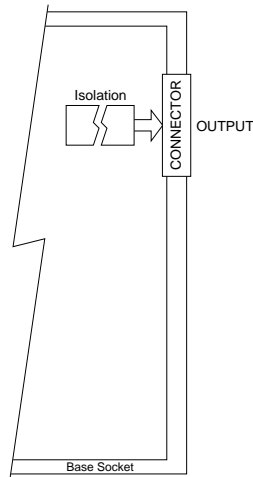


Italic figures indicate LED No. on the front panel.

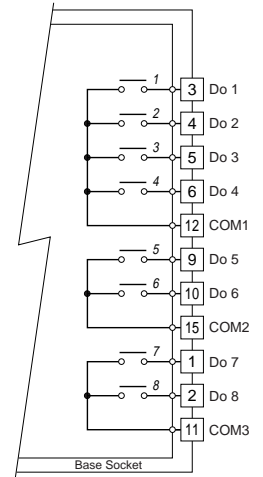
■ MODEL SUFFIX CODE: C1  
Contact Output (BCD)



■ MODEL SUFFIX CODE: C2  
Contact Output (BCD)

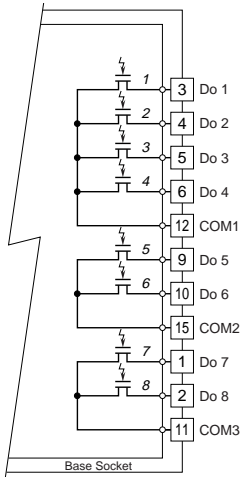


■ MODEL SUFFIX CODE: C7  
Relay Output (Do 8)



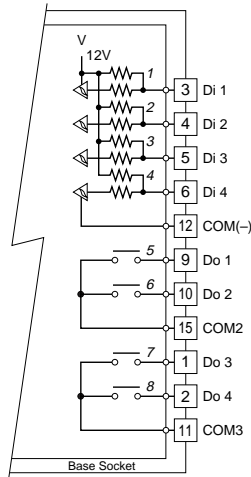
Italic figures indicate LED No. on the front panel.

■ **MODEL SUFFIX CODE: C8**  
Photo MOSFET Relay Output (Do 8)



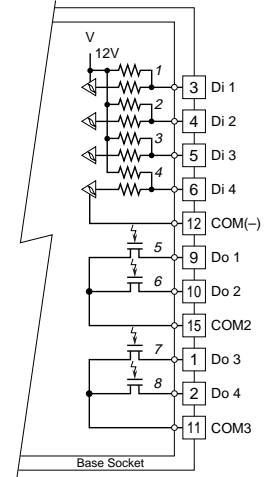
Italic figures indicate LED No. on the front panel.

■ **MODEL SUFFIX CODE: E5**  
Contact Input / Relay Output (Di 4/Do 4)



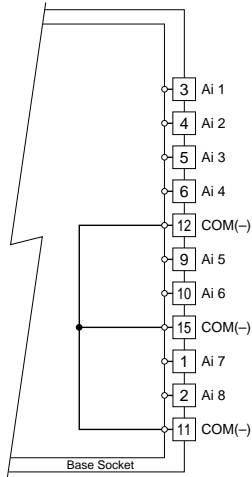
Italic figures indicate LED No. on the front panel.

■ **MODEL SUFFIX CODE: E6**  
Contact Inp./ Photo MOSFET Relay Out. (Di 4/Do 4)

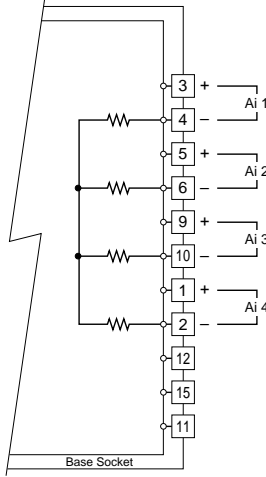


Italic figures indicate LED No. on the front panel.

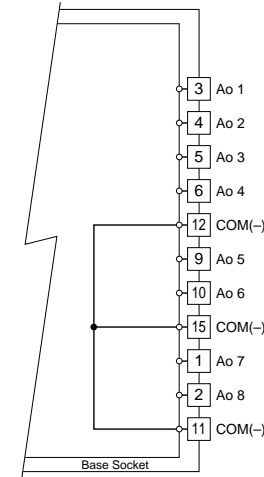
■ **MODEL SUFFIX CODE: G3**  
Analog Input (Ai 8)



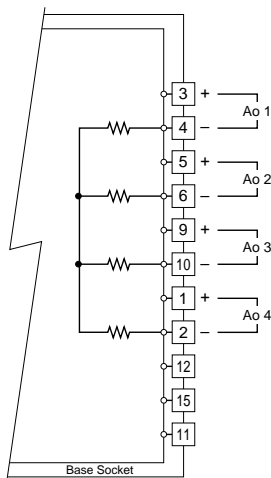
■ **MODEL SUFFIX CODE: G4**  
Analog Input (Ai 4)



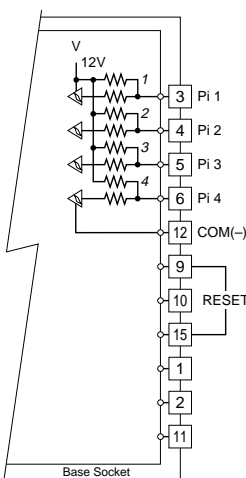
■ **MODEL SUFFIX CODE: M3**  
Analog Output (Ao 8)



■ **MODEL SUFFIX CODE: M4**  
Analog Output (Ao 4)

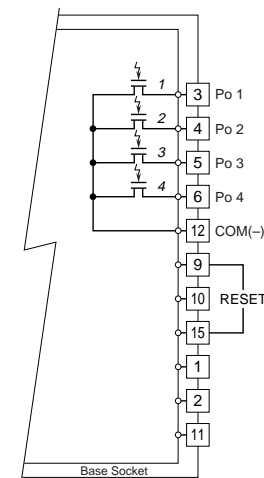


■ **MODEL SUFFIX CODE: P4**  
Pulse Input (Pi 4)



Italic figures indicate LED No. on the front panel.

■ **MODEL SUFFIX CODE: U4**  
Pulse Output (Po 4)



Italic figures indicate LED No. on the front panel.

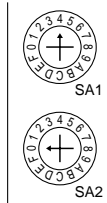
## INSTALLATION PROCEDURE

- 1) Assign and set station addresses to all 22LA1 units.
- 2) Connect power supply.
- 3) Connect transmission cables.
- 4) Connect all other external I/O devices.

### STATION ADDRESSES (SA)

#### 1) How to set an SA.

The 2-digit SA number is set at the front with two 16-position rotary switches (SA1 and SA2) for values from 00H up to FFH for a total of 256 different combinations. The upper switch (SA1) adjusts the first digit of an SA number.



[Example]  
SA = 40H

#### 2) How to assign SA for each unit.

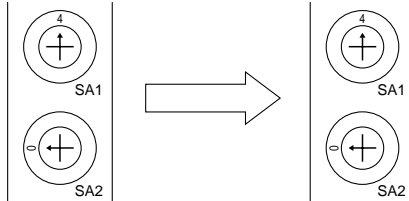
An input-only unit (type A2, A4, G3 or G4) transmits its input signals to an output-only unit (type C2, C7, C8, M3 or M4) with the same address.

When input from one unit is to be distributed to two or more output units, identical addresses can be given to these output units.

#### [Example]

Input-only Unit : SA = 40H

Output-only Unit : SA = 40H



#### 3) Paired units

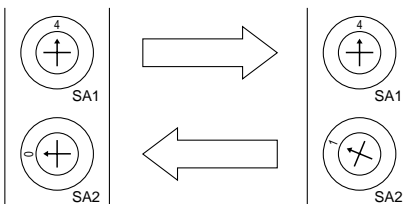
Input/output (dual purpose) units (type E5 or E6) can be paired with other dual purpose units with the matching I/O specifications.

An even SA number is given to either unit and this number plus 1 is assigned as SA of the paired unit.

#### [Example]

Input/Output Unit : SA = 40H

Input/Output Unit : SA = 41H



#### 4) Terminal block

Transmission lines (twisted-pair cables) and RUN output lines are all connected with DIN terminals.

##### Standard leadwire size

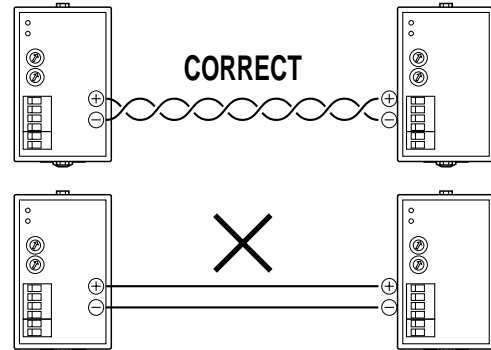
- Multi-strand : AWG #14
- Solid : 1.4 mm dia.

When using multi-strand cables, do not solder their core cables.

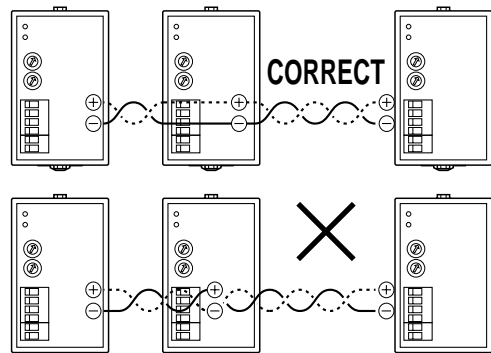
#### 5) Transmission (Twisted-pair) Cables

Use wires of 0.9 mm dia. or larger. (CPEV 0.9φ recommended)  
Connect line terminals (+) to (+) and (-) to (-) between units.  
Transmission will be impossible with as little as one unit's transmission lines reversed.

#### [Example 1]



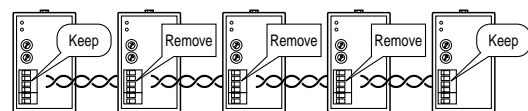
#### [Example 2]



#### 6) Jumper Connections

A 22LA1 unit is factory-equipped with a jumper across the terminator jumper connection terminals in order to close the circuit and thereby prevent transmission-line waveform reflections. With systems of 3 or more units, remove these jumpers from all units except those at the end of a transmission line.

#### [Example]



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## RESET TERMINALS (P4 and U4 modules)

- Closing\* across the terminals 9 – 15 at power startup initializes\*\* the counter values for Pi 1 thr. 4.
- DO NOT use these terminals for other than resetting purpose.

\*Close for at least 5 sec. after the power start up.

\*\*Reset the input unit counter first and then that of the output unit.

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## POINTS OF CAUTION

### ■ GENERAL

- Before you remove the unit from its base socket or mount it, turn off the power supply and input signal for safety.

### ■ ENVIRONMENT

- When heavy dust or metal particles are present in the air, install the unit inside proper housing and ventilate it.
- Do not install the unit where it is subjected to continuous vibration. Do not apply physical impact to the unit.
- Environmental temperature must be within -5 to +50°C (23 to 122°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

### ■ WIRING

- Do not install cables (power supply, input and output) 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.