

**REPEATER
(SIN-NET, M-Bus use)**

MODEL **DAL4**

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:

Repeater(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 RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
 100 – 240V AC rating: 85 – 264V, 47 – 66 Hz, approx. 11VA
 24V DC rating: 24V ±10%, approx. 250mA

■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply 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 -5 to +55°C (23 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

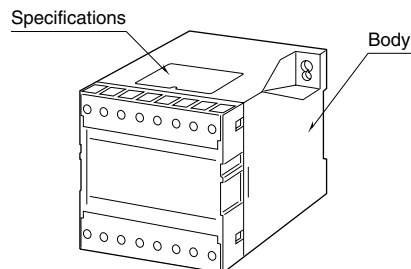
■ WIRING

- 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.
- Be sure to close the terminal cover for safety.

■ 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.

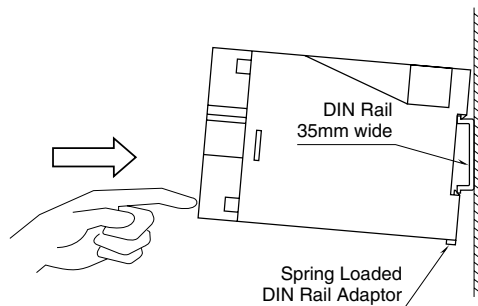
COMPONENT IDENTIFICATION



INSTALLATION

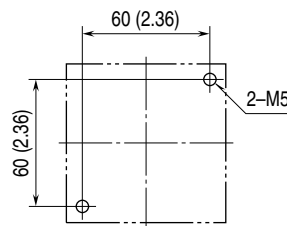
■ DIN RAIL MOUNTING

Set the unit so that its DIN rail adaptor is at the bottom. Hang the upper hook at the rear side of the unit on the DIN rail and push in the lower. When removing the unit, push down the DIN rail adaptor utilizing minus screwdriver and pull.

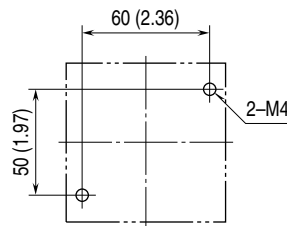


■ WALL MOUNTING unit: mm (inch)

• M5 SCREWS



• M4 SCREWS

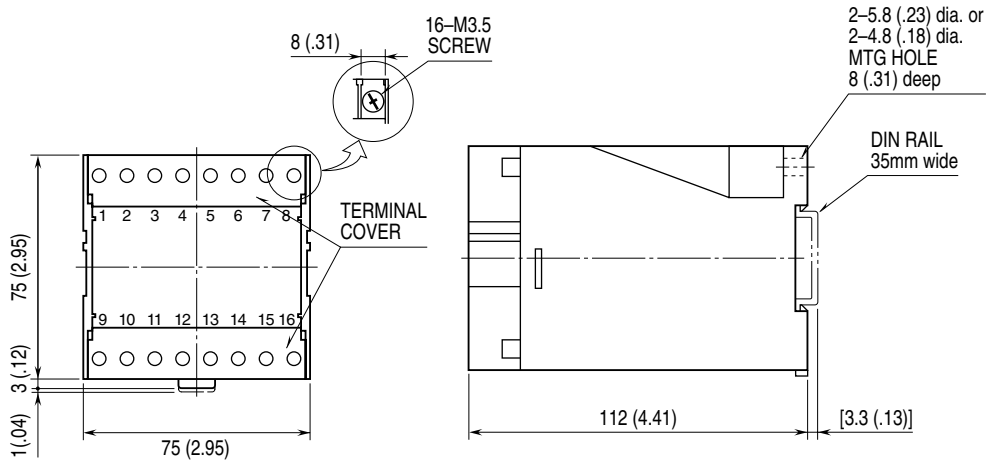


TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

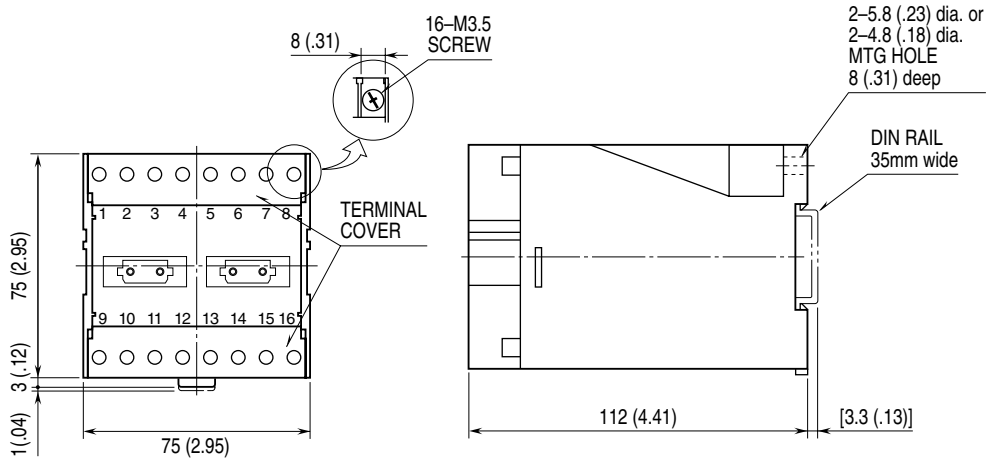
■ EXTERNAL DIMENSIONS unit: mm (inch)

• DAL4-1



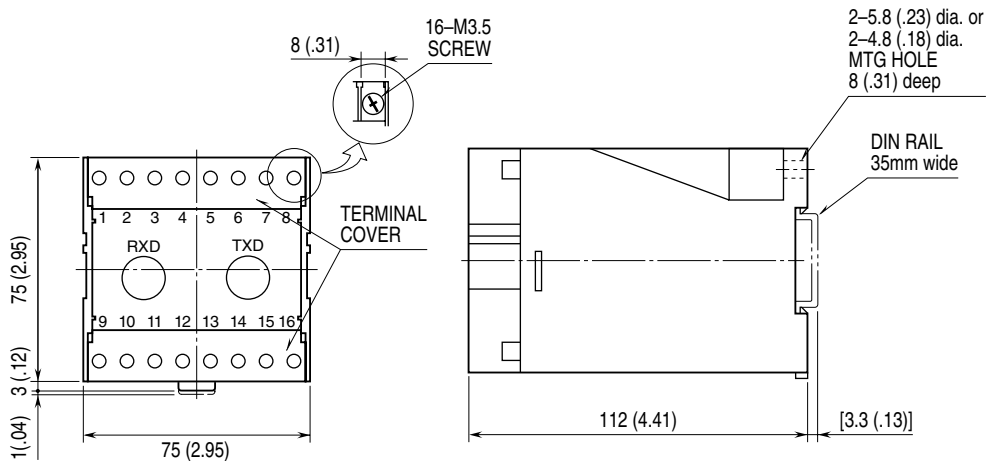
•When mounting, no extra space is needed between units.

• DAL4-2



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

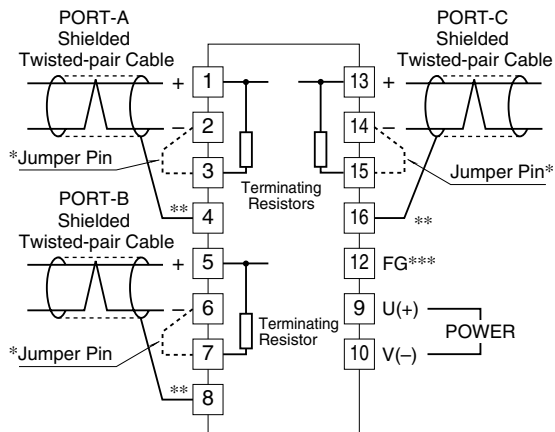
• DAL4-5, 7



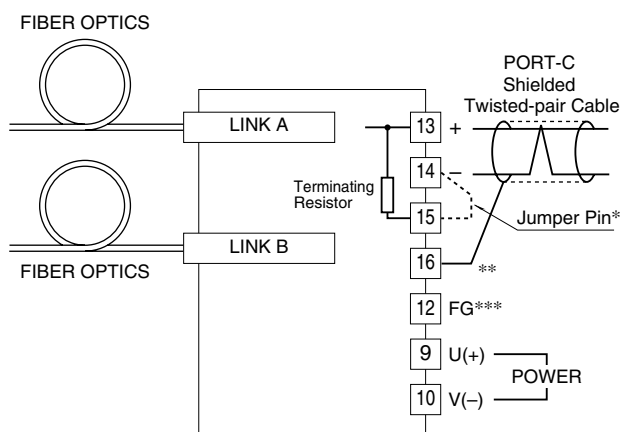
•When mounting, no extra space is needed between units.

CONNECTION DIAGRAM

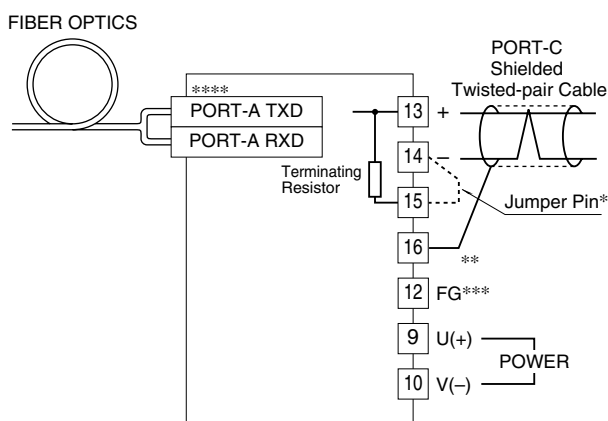
DAL4-1



DAL4-2



DAL4-5, 7



* When the unit is located at the end of transmission line via twisted-pair cable (= no cross-wiring), short across these terminals. Do not short them for the one not located at the end.

** When the DAL4 is to be connected with the 22LA1 or DLA1 multi transmission devices, do not connect the shield wire to the SG (4, 8 or 16) but to the FG at the instrumentation panel.

*** Grounding the FG improves noise immunity of the power and transmission lines, and is a recommended practice when the DAL4 is installed where a noise is present.

WIRING INSTRUCTIONS

SCREW TERMINAL

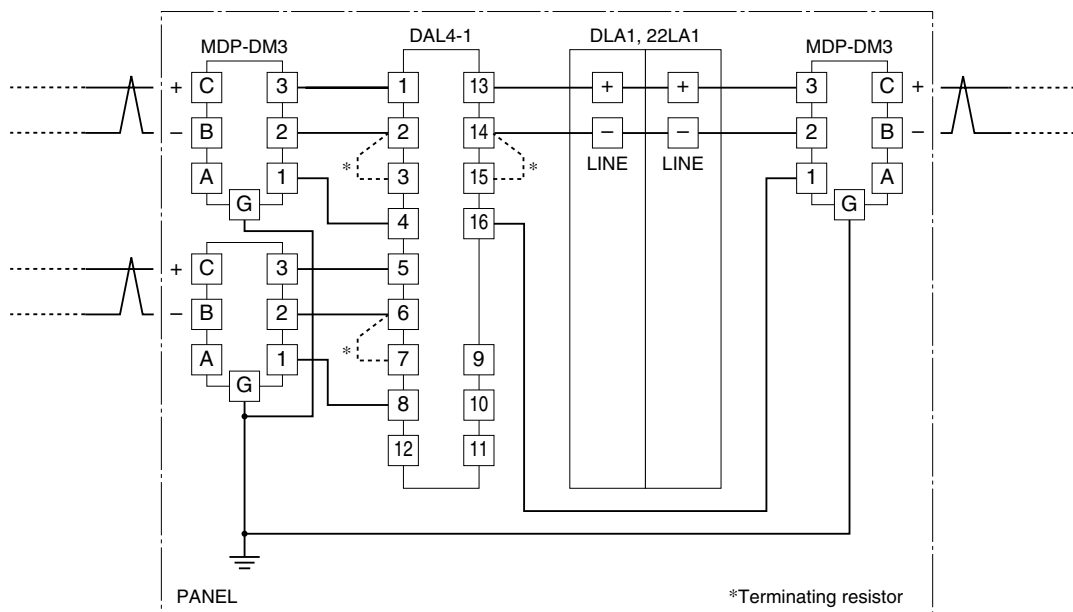
Torque: 0.8 N·m

CHECKING

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Power input voltage: Check voltage across the terminal 9 – 10 with a multimeter.
- 3) Twisted-pair cable: CPEV-0.9 dia. or larger. Check that the (+) are connected to (+), (-) are connected to (-).
- 4) Twisted-pair cable ports: When the port is located at the end of a transmission line, or unused, short across the terminating resistors (2 – 3, 6 – 7 or 14 – 15).

LIGHTNING SURGE PROTECTION

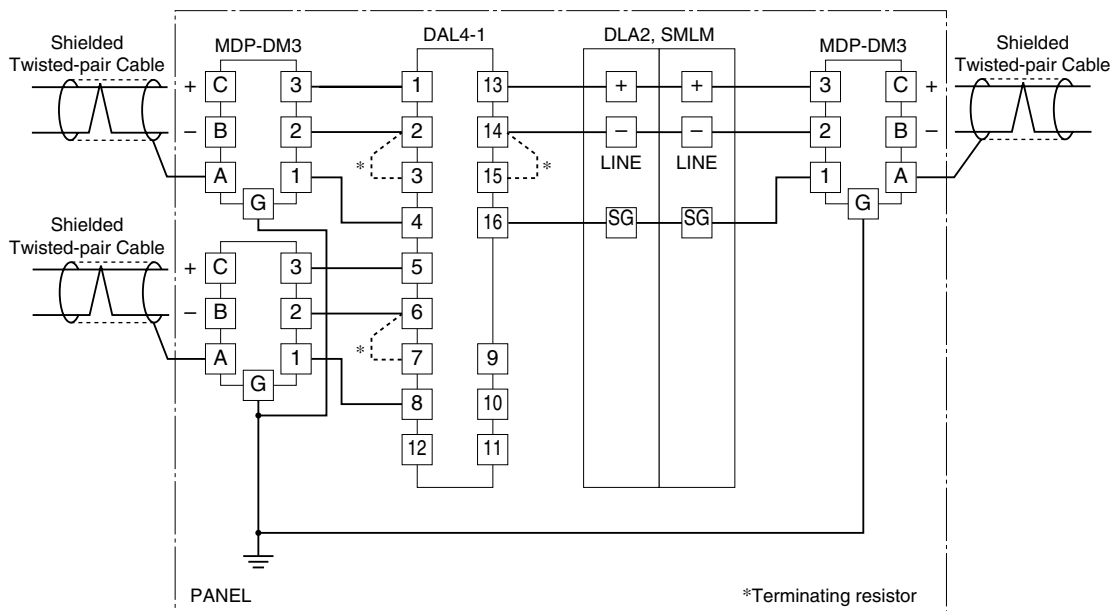
■ MULTIPLEX TRANSMISSION



Notes

- Be sure to use lightning surge protectors (model: MDP-DM3) on twisted-pair cables.
- Be sure to connect the terminal No. 1 of the MDP-DM3 with SG terminal of the DAL4.
- For connecting model DLA1 or 22LA1 with the DAL4 in the same panel, install them between the MDP-DM3 and the DAL4. Be sure to connect the terminal No. 1 of the MDP-DM3 with SG terminal of the DAL4.
- Lightning surge protectors for power supply line are recommended for complete protection.

■ M-BUS



Notes

- Be sure to use lightning surge protectors (model: MDP-DM3) on twisted-pair cables.
- Be sure to connect the terminal No. 1 of the MDP-DM3 with SG terminal of the DAL4.
- For connecting model DLA2 or SMLM with the DAL4 in the same panel, install them between the MDP-DM3 and the DAL4. Be sure to connect the terminal No. 1 of the MDP-DM3 with SG terminal of the DAL4.
- Lightning surge protectors for power supply line are recommended for complete protection.