INSTALLATION MANUAL

FLUSH-MOUNT HANDS-FREE MASTER STATION N-8031MS

Thank you for purchasing TOA's Flush-Mount Master Station.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

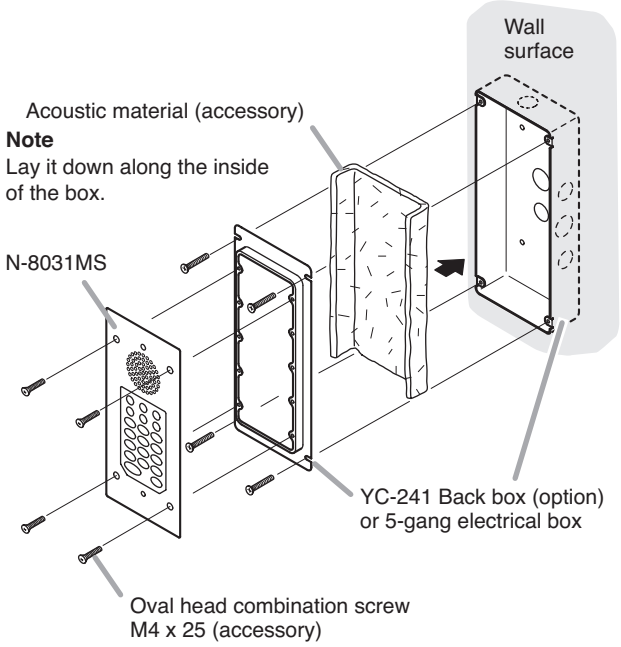
1. GENERAL DESCRIPTION

The N-8031MS is a flush- or surface-mount master station designed to operate in conjunction with TOA IP Intercom Exchange and features high quality hands-free conversation.
Connecting a foot switch or other external switch to the external dial input terminal permits one-touch dialing operation by way of such switches.
Handset conversation can be made in conjunction with the optional RS-191.

2. WALL MOUNTING

2.1. In-Wall Mounting Using an electrical box

Attach the N-8031MS to the YC-241 Back Box or an electrical box installed in a wall.



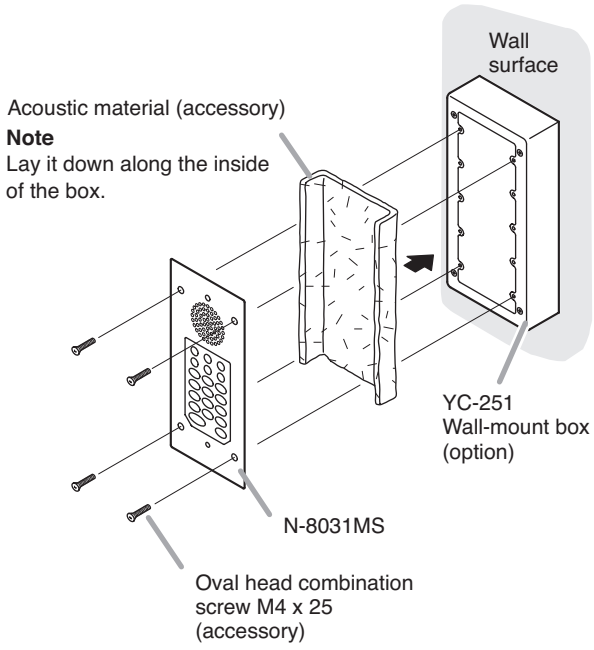
Note
The wall should be over 12 mm thick, and the opening in the wall for an electrical box should be under 115 mm (wide) by 254 mm (high).

Accessory screws

The N-8031MS comes with 2 types of screws: oval head combination screw M4 x 25 and oval head combination screw UNC No.6 x 18.
For the electrical box provided with unified threads, use the oval head combination screws UNC No.6 x 18.

2.2. On-Wall Mounting Using a Wall-Mount box

Attach the N-8031MS to the YC-251 Wall-Mount Box installed on a wall.

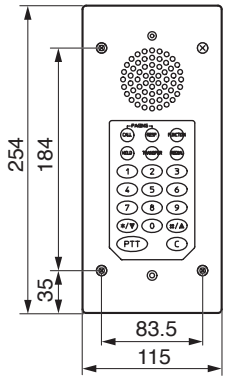


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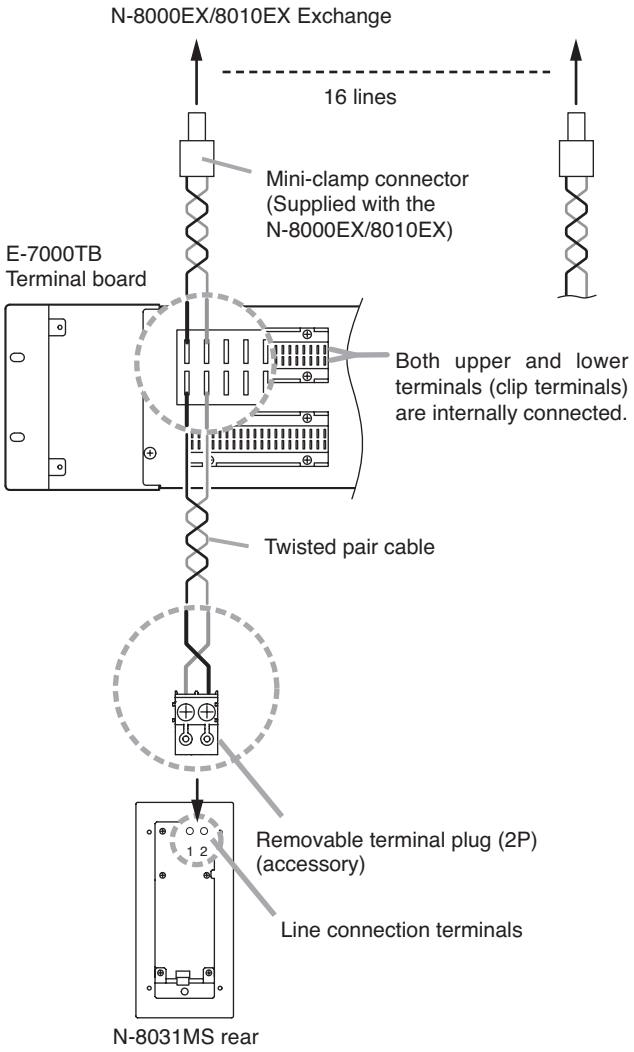
[Installation completion drawing]

Unit: mm



3. WIRING

3.1. Connection to the Exchange

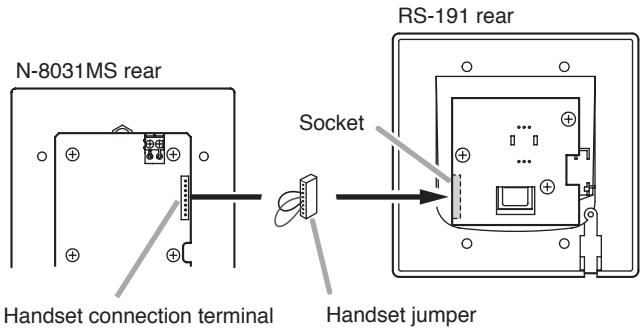


To connect the cables from the N-8000EX/8010EX Exchange to the N-8031MS, use the removable terminal plug (2P) supplied with the N-8031MS.
The cables have no polarity.

3.2. Connection to RS-191

Connecting the RS-191 Option Handset to the N-8031MS permits handset conversation.

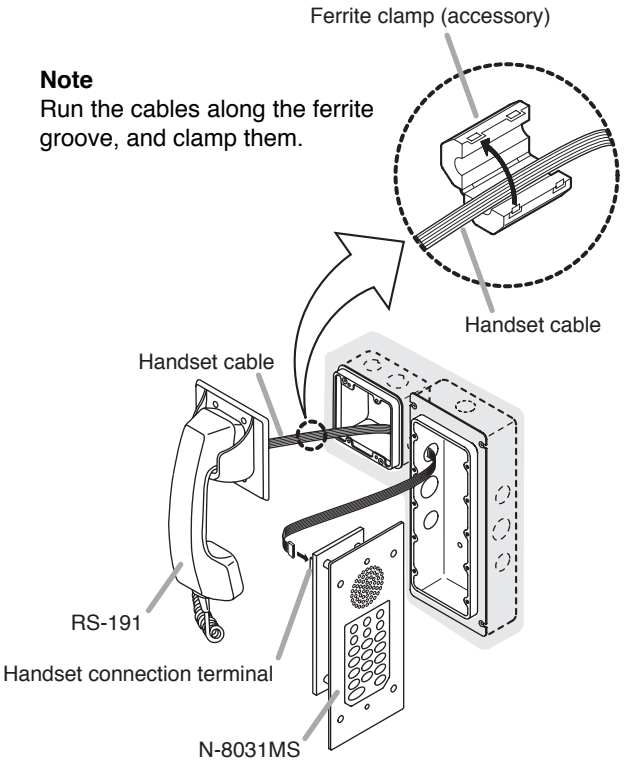
Step 1. Remove the handset jumper attached to the N-8031MS's handset connection terminal, then insert it to the socket on the RS-191's rear PC board.



Note
Though the socket on the PC board is faced inside, you can insert the handset jumper into the socket from the side.

Step 2. Install the ferrite clamp (supplied with the N-8031MS) onto the RS-191's handset cables. Then, connect the cables to the N-8031MS's handset connection terminal.

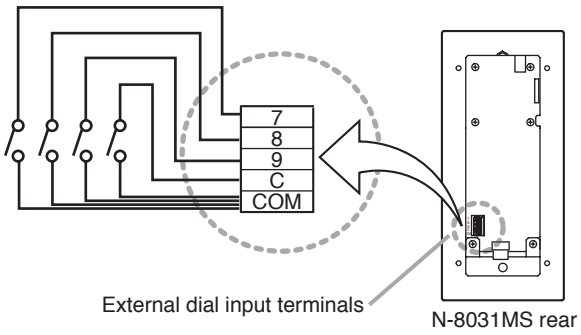
Note
Run the cables along the ferrite groove, and clamp them.



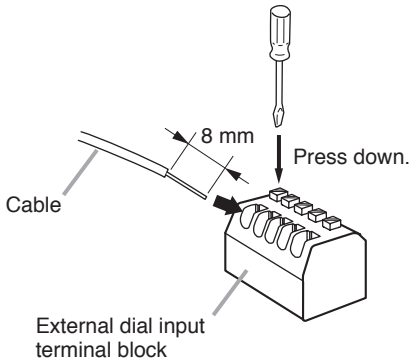
3.3. Connection to External Switch

External switches such as footswitches can be connected to the N-8031MS's external dial input terminals.
Terning on each switch connected to the terminal [7], [8], [9], or [C] permits the same operation as performed by pressing the dial [7], [8], [9], or [C].
An electrical current of 1 mA flows through each contact.

Note
The cable length from the external switch should not exceed 3 m.



[Connections]



3.4. The Type of Cables

The types of cables are to be determined according to the following conditions.

- Twisted pair wires (such as those used for electronic push-button telephone) are to be used for wiring between the Exchange and the stations in principle.
- The number of cables pairs laid should be determined considering the possibility of future expansion of the system.
- Outdoor wires should be used where wiring passes through inaccessible areas such as ceilings or under floors where the maintenance is not performed. Indoor wires may also be used, however, in case where there is no risk of deterioration due to exposure to heat, etc.

Note
Specifications related to each junction are as follows.

Mini-clamp connector (N-8000EX/8010EX line terminal)
Conductor diameter: ø 0.4 – 0.65 mm (AWG22 – 26), Solid wire
Outside diameter: ø 1.05 mm or below
Clip terminal (E-7000TB)
Conductor diameter: ø 0.4 – 0.8 mm (AWG20 – 26), Solid wire
Outside diameter: ø 1.5 mm or below
Removable terminal plug (N-8031MS line terminal)
Conductor diameter: ø 0.4 – 1.6 mm (AWG14 – 26), Solid wire/Stranded wire
External dial input terminal (N-8031MS)
Conductor diameter: ø 0.8 – 1.3 mm (AWG16 – 20), Solid wire/Stranded wire

3.5. Relations Between Core Diameter of Cable and Maximum Cable Length

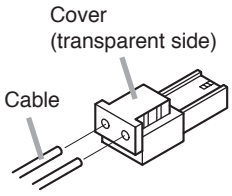
Refer to the following chart as guidelines when designing the distance between the Exchange and stations so that loop resistance value becomes 170 Ω or less.

Conductor diameter (mm)	Loop resistance (Ω/ km)	Maximum cable length between the Exchange and station. (Assuming that the loop resistance is 170 Ω)
ø0.4	295	570 m
ø0.5	187	900 m
ø0.65	113	1.5 km
ø0.9	58	2.9 km

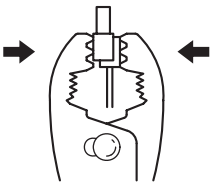
3.6. Terminal Station Connection

Mini-clamp connectors for line terminals and removable terminal plugs for paging output terminal are supplied with the N-8000EX/8010EX Exchange.
Perform each connector connection as follows.

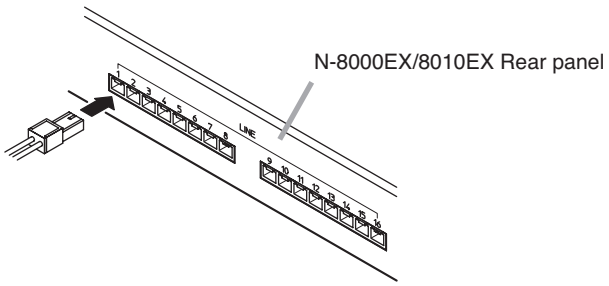
Step 1. Cut off two-cable ends in equal length, and insert them securely to a cover section (transparent side) of the mini-clamp connector.
Note
Insert the cable without stripping the cable jacket.



Step 2. With a pair of pliers, lightly pinch the mini-clamp cover and, after ensuring that the cable is securely inserted, firmly squeeze on the cover.
Note
Squeeze on the mini-clamp cover until it is correctly locked.

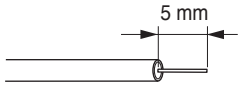


Step 3. Insert the wired connector (plug) into the exchange's connector (socket) until it locks into place.



3.7. Terminal Plug Connection

Step 1. Strip a cable jacket of approx. 5 mm from the cable end.



Note
Do not solder plate on exposed inner cables when using a stranded wire.

Step 2. Loosen the terminal screws and insert the cables.

Step 3. Tighten the terminal screws securely.
Notes
- Tug lightly on the cable to be sure that it does not pull free. If the cable pulls free, loosen the terminal screw again and reconnect from **Step 2**.
- To avoid stripping the screws, use the screwdriver appropriate to the screws tightened into the terminal plug.

Step 4. Insert the wired terminal plug into the pin header on the N-8031MS's PC board.

