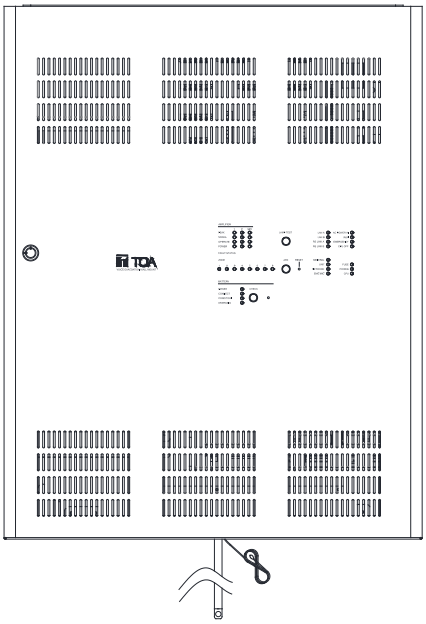
INSTALLATION MANUAL

VOICE EVACUATION WALL MOUNT

VX-3308WM



CE 1134
TOA Electronics Europe GmbH Suederstrasse 282, 20537 Hamburg, Germany 1134-CPR-195 18 DOP 18-002
EN 54-4:1997/AC:1999+ A1:2002+ A2:2006 EN 54-16:2008 Fire Detection and tire alarm systems: Voice alarm control and indication system for fire detection and fire alarm systems for buildings Options: manual silencing of voice alarm condition manual reset of voice alarm condition voice alarm condition output indication of a fauil related to voice alarm zones voice alarm manual control emergency microphones power amplifiers battery box

When an EN 54-4 and EN 54-16 compliant VX-3000 system has to be installed, then carefully read the separate manual titled "APPENDIX: ADDITIONAL INSTALLATION INSTRUCTIONS FOR AN EN 54-4 AND EN 54-16 COMPLIANT SYSTEM" and follow up the installation and configuration requirements explained therein. This APPENDIX contains the basic description of settings and installations, so please refer to the general instruction sections in this document for more details.

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

TOA corporation

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Chapter 1

NOTE

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.
- This equipment is not suitable for use in locations where children are likely to be present.
- An equipment installer and the person in charge of maintenance are required to fully understand the functions and structure of this unit, then be aware of electrical and mechanical risks before work.
  Before starting work, he or she should take possible measures to prevent occurrence of such risks.
  Be sure to contact your nearest TOA dealer if you need to confirm unclear points about risk sources of this unit.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.

⚠WARNING	Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.

- Since the unit is designed for indoor use, do not install it outdoors. If installed outdoors, the aging of parts causes the unit to fall off, resulting in personal injury. Also, when it gets wet with rain, there is a danger of electric shock.

- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.

- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.

- (Applicable to RM-200SF, RM-300X, RM-320F, and RM-210F only)
  Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.

- (Applicable to RM-200SF, RM-300X, RM-320F, and RM-210F only)
  Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the Ac outlet and contact your nearest TOA dealer. make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
  - If you detect smoke or a strange smell coming from the unit
  - If water or any metallic object gets into the unit
  - If the unit falls, or the unit case breaks
  - If it is malfunctioning (no tone sounds)

- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit.
  (Applicable to RM-200SF and RM-300X only)
  Refer all servicing to qualified service personnel.

- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.

- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.

- When replacing the fuse, be sure to use the supplied one. Using any other fuse than supplied may cause fire or electric shock.
  VX-030DA : Blade 20 A
  VX-3308WM: 250V T8A H, Blade 30 A and Blade 7.5 A

- Be sure to switch off the unit when replacing the fuse.
  Inserting or removing the fuse with the amplifier's power on may cause personal injury.

- Handle or use the batteries properly.
  Doing otherwise may cause leakage or explosion of the batteries, resulting in a fire, personal injury, damage to peripheral equipment, or contamination of environment.

⚠ CAUTION Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

When Installing the Unit

- Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire. Also, periodically clean the ventilation slots of dust.

- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.

- Note correct polarity (positive and negative orientation) when connecting the power supply cord. Reversed polarity connections will cause damage to the unit.

- To avoid electric shocks, be sure to switch off the VX-3308WM's power when connecting the unit.

- When connecting multiple appliances to a single power socket through a multi-outlet power strip, a total current consumption of the appliances must not exceed the allowable current capacity of the power socket. Failure to observe this instruction may result in a fire or electric shock.

When the Unit is in Use

- Do not operate the unit for an extended period of time with the sound distorting. Doing so may cause the connected speakers to heat, resulting in a fire.

- Use the specified AC adapter for the unit. Note that the use of other adapter may cause a fire.

- Contact your TOA dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.

- Make sure to observe the following handling precautions so that a fire or personal injury does not result from leakage or explosion of the battery.
  - Do not short, disassemble, heat nor put the battery into a fire.
  - Avoid using both new and old batteries together.
  - Never charge batteries of the type which are not rechargeable.
  - Do not solder a battery directly.
  - Be sure to use the specified type of batteries.
  - Note correct polarity (positive and negative orientation) when connecting a battery to the unit.
  - Avoid locations exposed to the direct sunlight, high temperature and high humidity when storing batteries.

- (Applicable to RM-200SF, RM-300X, RM-320F, and RM-210F only)
  Have the unit checked periodically by the shop from where it was purchased. Failure to do so may result in corrosion or damage to the unit or its mounting bracket that could cause the unit to fall, possibly causing personal injury.

2. GENERAL DESCRIPTION

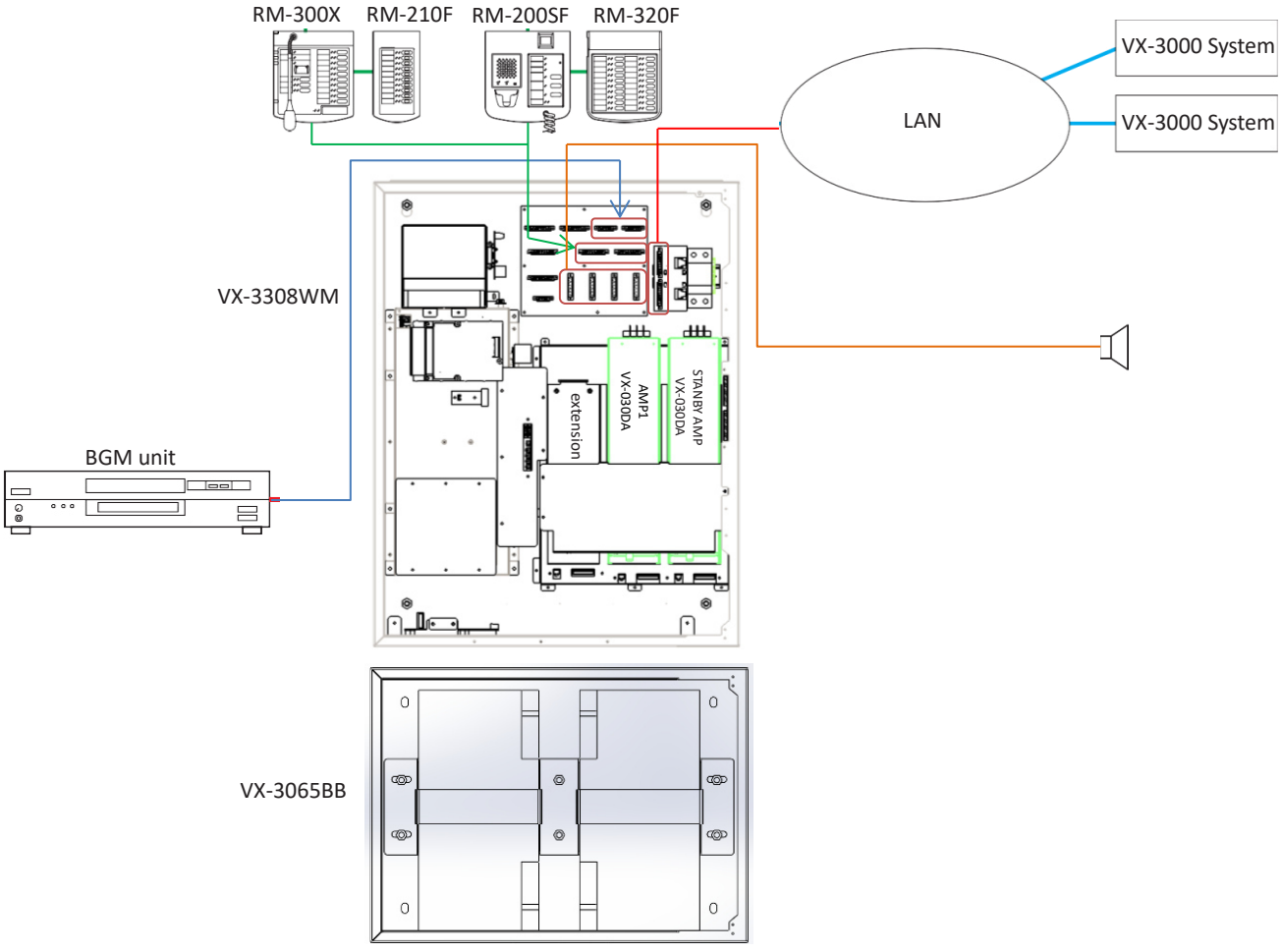
The TOA VX-3308WM Voice Evacuation Wall Mount is designed for both general and emergency purpose broadcasts. It is comprised of the Voice Evacuation Frame, Digital Power Amplifier modules, Power Supply unit, Emergency Power Supply, and a user-specified number of Remote Microphones.
The system complies with the EN54-4 and EN54-16 Standard and its failure detection circuitry operates continuously to check components and speaker lines for any irregularities. If detected, failure warnings are provided by way of an LED indicator and a buzzer.
The VX-3308WM allows 4 types of broadcasts to be made: General-purpose broadcast such as general paging and BGM, Emergency warning broadcast that can be broadcast with priority over the Emergency broadcast, Emergency broadcast that the emergency messages are to be broadcast by an automatic announcement device or remote microphone, All-zone emergency broadcast that is to be made available even during system malfunctions or failures.
Two patterns of the Emergency broadcast can be activated simultaneously.
The dedicated software is used to perform all necessary settings related to the entire system operation and functions including system configurations, input-to-output signal routing, function assignment to the operation keys, operation of the control terminals, and selection of the failure detection points.

3. SYSTEM FEATURES

- VX-3308WM is a voice evacuation system.
- Decentralized configuration is possible via network.
- VX-3308WM is constructed up to 256 zones as system.
- Speaker Selector function is implemented, then VX-3308WM is able to cover many zones.
- A general broadcast for a sound quality regulating function is possible to digitalize all sound.
- A general broadcasting is possible by latitude setting of control input/output and priorities.

4. SYSTEM EXAMPLE

VX-3308WM + VX-3065BB + RM-200SF etc. System Connection Diagram

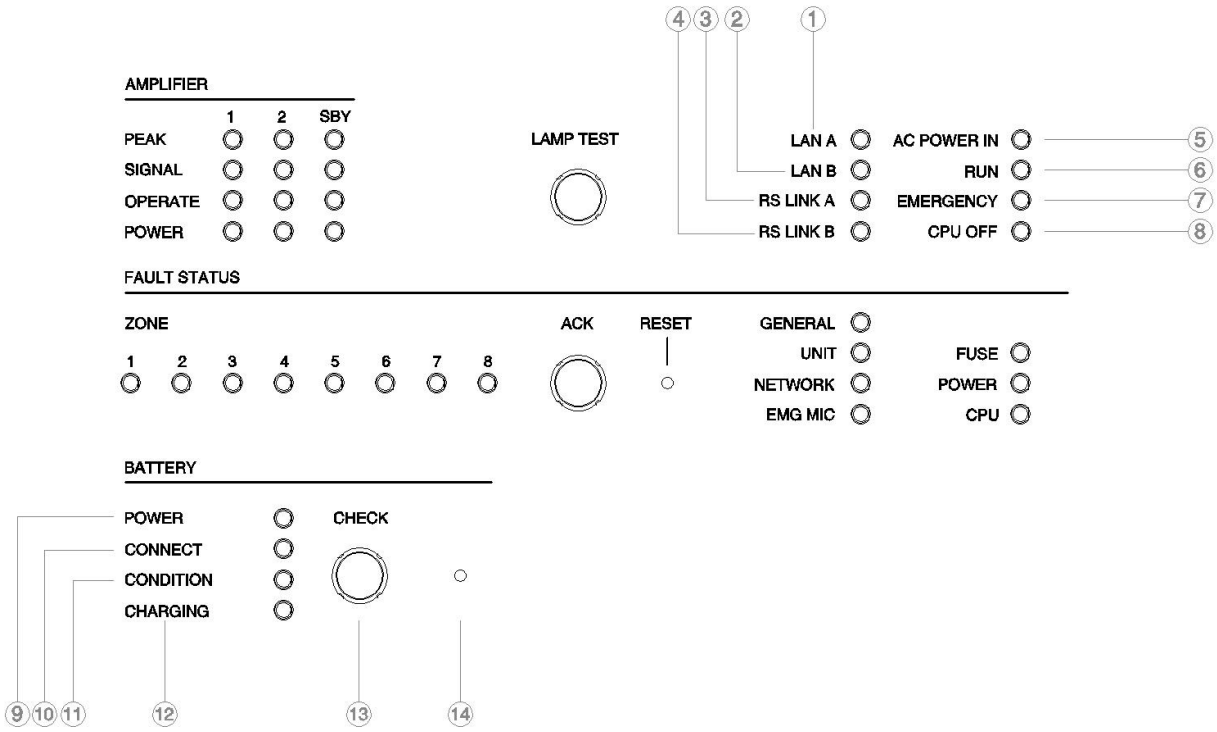


Chapter 2

NOMENCLATURE AND FUNCTIONS

1. VX-3308WM VOICE EVACUATION WALL MOUNT

1.1 [Front (Partial enlargement)]



1. LAN A indicator (Green)
Lights when the LAN link A connector (51) on the LAN Connector Board is connected, and flashes during LAN communications.

2. LAN B indicator (Green)
Lights when the LAN link B connector (51) on the LAN Connector Board is connected, and flashes during LAN communications.

3. RS LINK A indicator (Green)
Lights when the RS LINK A connector (48) on the Connector Board is connected, and flashes while communications are being performed via the RS LINK A connector.

4. RS LINK B indicator (Green)
Lights when the RS LINK B connector (48) on the Connector Board is connected, and flashes while communications are being performed via the RS LINK B connector.

5. Power indicator (Green)
Lights when the power is supplied.

6. RUN indicator (Green)
Normally flashes continuously. Goes off while in a CPU off state (p. 3-13). Also goes off while in standby state*1.

*1 A state during power failures or a state that the unit is internally initialized after power-on

7. Emergency indicator (Red)
Lights when the VX-3308WM is in an emergency condition or while in a CPU off state (p. 3-13).

8. CPU off indicator (Red)
Lights while in a CPU off state (p. 3-13).

9. Battery indicator [BATTERY POWER]
Indicates the state of battery usage. Lights green when the AC power supply is interrupted and switched over to the backup batteries.

10. Battery connection indicator [BATTERY CONNECT]
Lights green when the battery is connected.

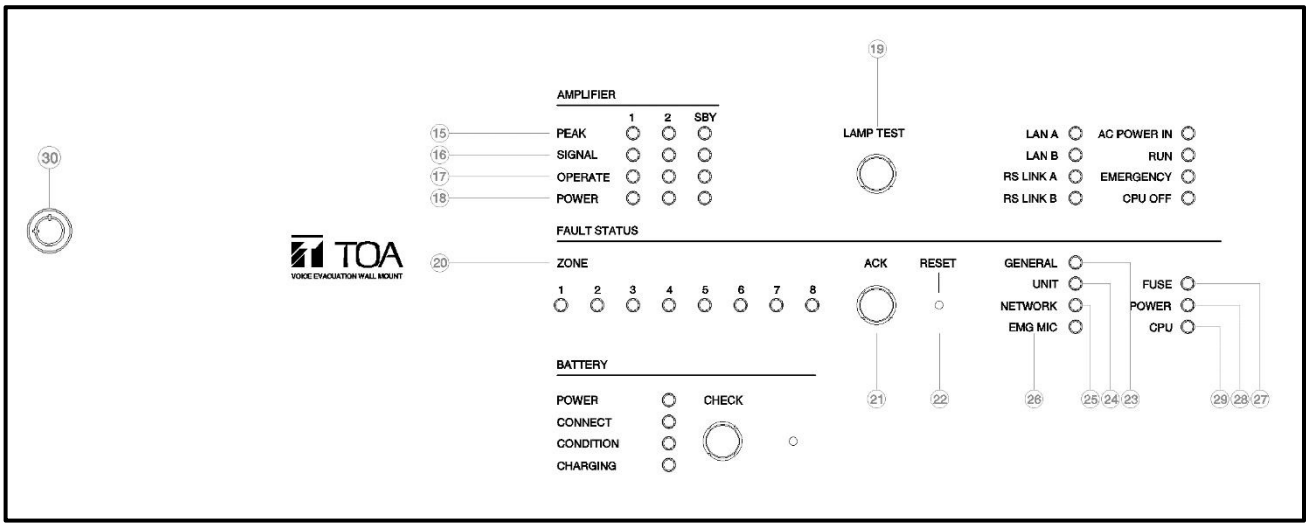
11. Battery check indicator [BATTERY CONDITION]
In the AC operated system, the internal resistance value of the battery is measured automatically or manually to check whether the battery is faulty. The Battery check indicator indicates the result.
- Before measurement:
  Flashes green at 2-second intervals.
- During measurement:
  Flashes green at 1-second intervals.
- Normal: Lights green.
- Abnormal: Remains unlit.

In the battery-operated system, the battery voltage is constantly monitored and its level is indicated by the indicator as shown below without pressing the Battery check button.
- Lights green: 25 V or more
- Flashes green: 20 – 25 V
- OFF: 20 V or less

12. Charging indicator [CHARGING]
Indicates battery charging status. Flashes green while charging, and continuously lights green after charging completion.

13. Battery check button [BATTERY CHECK]
Pressing this button permits the internal resistance measurement of the backup batteries and also the operation check of the built-in power supply unit fan.
The Battery check indicator goes off if the measured resistance exceeds the specified value.

14. Shutdown button
Pressing this button forcibly shuts down this unit irrespective of Switch 8 ON/OFF setting of the DIP switch 1 (31).



15. Amplifier peak indicators (Red)
Show the input signal state to the power amplifier when the power amplifier module is installed.
The indicator corresponding to the module slot port will light if the input signal level exceeds +0.5 dBV.
It remains unlit when no power amplifier module is installed.

16. Amplifier signal indicators (Green)
Show the input signal state to the power amplifier when the power amplifier module is installed.
The indicator corresponding to the module slot port will light if the input signal level exceeds -25 dBV.
It remains unlit when no power amplifier module is installed.

17. Amplifier operate indicators (Green)
The indicator corresponding to the module slot port will light or go off depending on the operation state of the power amplifier when the power amplifier module is installed.

Operating status	Indicator status
In-use	Lit
Standby	unlit
Dc fuse blowout	unlit
Protection* activated	unlit

The built-in protection circuit operates if some irregularities occur inside the amplifier such as abnormal temperature rise or fan failure.It remains unlit when no power amplifier module is installed.

18. Amplifier power indicators (Green)
The indicator corresponding to the module slot port will light or go off depending on the operation state of the power amplifier when the power amplifier module is installed.

Operating status	Indicator status
In-use	Lit
Standby	Lit
Dc fuse blowout	unlit
Protection* activated	Lit

* The built-in protection circuit operates if some irregularities occur inside the amplifier such as abnormal temperature rise or fan failure.

It remains unlit when no power amplifier module is installed.

19. Lamp test key
Used to test each indicator on the front panel of the VX-3308WM Voice Evacuation Wall Mount.
All indicators remain lit and the buzzer sounds as long as this key is pressed (does not include AC power in and battery LED indicators).

20. Zone fault indicators (Yellow)
Lights or flashes when the speaker line surveillance function detects any of the 3 failures types : poor insulation (ground fault), overload (line short), and cable disconnection.

21. Fault ACK key
The buzzer will sound and the fault indicator will flash when a failure is detected in the system. Press this key to stop the buzzer and change the Fault indicator from flashing to steady on.

22. Fault reset key
Pressing this key resets the failure information (the buzzer and fault indicators) of the system.

23. General fault indicator (Yellow)
Lights while in a CPU off state (p. 3-13) Lights or flashes when a failure is detected in the system.

24. Unit fault indicator (Yellow)
Lights or flashes when a failure is detected in the unit

25. Network fault indicator (Yellow)
Lights or flashes when failures are detected in communications with the other VX-3000F or VX-3308WM
It also flashes or lights at network setting and when a configuration error occurs.

26. Emergency microphone fault indicator(Yellow)
Lights or flashes when failures are detected in Emergency microphone.

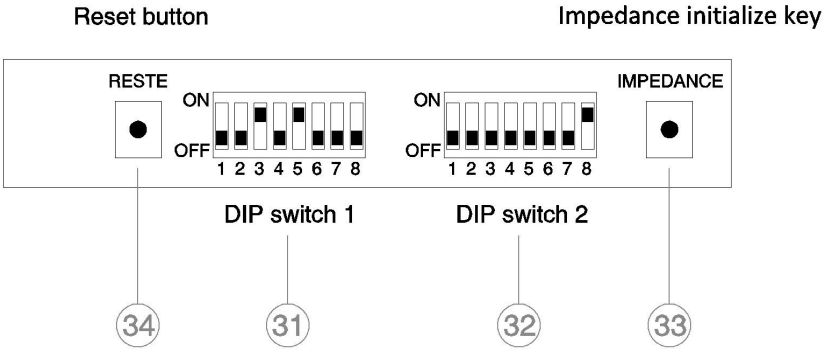
27. Fuse fault indicator (Yellow)
Lights or flashes when a DC fuse blowout is detected.

28. Power fault indicator (Yellow)
Lights or flashes when failures are detected in Power Supply manager.

29. CPU fault indicator (Yellow)
Lights when the VX-3000 system is in CPU off state (p. 3-13) or when a failure is detected in the VX-3308WM.

30. Door Lock
It is used to lock the VX-3308WM to prevent opening the case door by unauthorized personnel.

1.2 [Back of the Font Panel]



31. DIP switch 1:Power Supply Settings

- Switches 1 and 2 are not used.
  Be sure to leave both switches OFF.

- Switches 3 – 8 are factory-preset as shown below.
  Switches 3 and 5: ON
  Switches 4 and 6 – 8: OFF

Each switch function is described as follows.

- Switches 3 is not used.
  Be sure to leave the switches ON.

- Switches 4 and 5
  Set the upper limit value of the internal battery resistance and battery connection cable resistance to be monitored for fault detection.

Setting switch combination of 4 and 5 is as follows.

		5	
		ON	OFF
4	ON	25 mΩ	100 mΩ
	OFF	50 mΩ*	DISABLE

- Switch 6
  Sets the battery charging current.
  ON: 11 A (100 to 200 Ah)
  OFF*: 5.5 A (under 100 Ah)
  Be sure to leave the switches OFF when the battery is 65Ah.
  [Space]
  * Settings compliant with EN 54-4

- Switches 7 is not used.
  Be sure to leave the switches OFF

• Switch 8
Places the unit in AC operation mode or battery mode.
ON: All power outputs are shut down when AC power fails even if backup batteries are connected. (AC operation mode).
OFF:Battery is used as backup power supply when AC power fails. (Battery mode)
Be sure to set to OFF in normal operation.

32. DIP switch 2
• Switches 1 – 3
used to allocate speaker lines in cpu-off mode.
(See p. 3-6.)

• Switches 4 – 6
These switches are not used.

1.3 [Inside]

Ⓐ LAN Connector Board
Ⓑ ATT Out Board
Ⓒ Volume,ID Setting
Ⓓ Stand by Amplifier
Ⓔ Amplifier Module,slot 2
Ⓕ Slot for Amplifier Module,slot 1
Ⓖ Power Switch
Ⓗ Safety Ground Terminal
Ⓘ DC out Board (Fuse and DC outlet)
Ⓙ Connector Board

35. Audio input volume controls
Adjust the input volume of each input channel. rotating the control fully counterclockwise mutes the input sound source connected to that channel.

36. CPU Reset key
Pressing this key reactivates the VX-3308WM.

37. ID switch
Sets the VX-3308WM's ID number (device number).

38. DA control link connector
Connect this connector to the DA control link connector of the installed digital power amplifier module.

39. DA output link connector
Connect this connector to the DA output link connector of the installed digital power amplifier module.

40. Fuse
Use a blade fuse described below depending on the power amplifier's rated output.
VX-015DA : 10 A
VX-030DA : 20 A

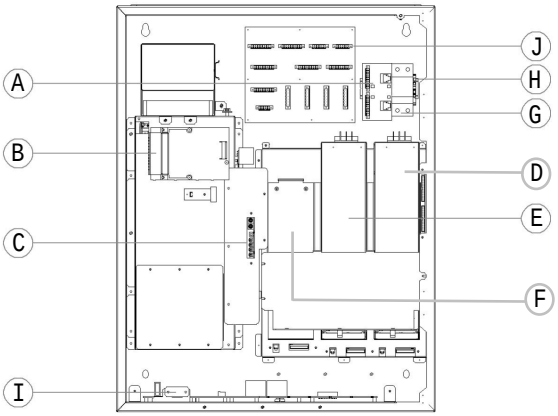
• Switch 7
Used when confirming the firmware version.

• Switch 8
used to set the IP address. (See p. 3-8.)

Note
By default, switches 1 – 7 are set to Off, and switch 8 to ON

33. Impedance initialize key
Press this key to acquire the initial value of the speaker line impedance as failure detection is executed on the basis of the impedance change.

34. Reset button
Pressing this button resets this power supply unit.



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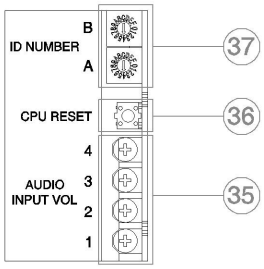
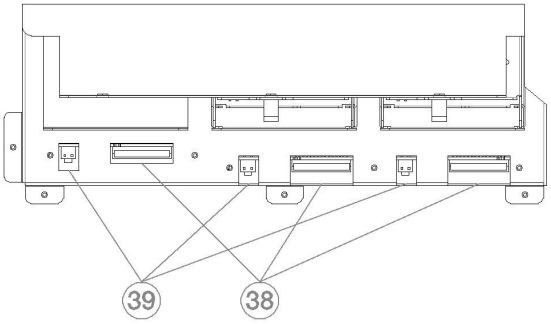




41. Amplifier DC power input terminal
When a power amplifier module is installed, connect the power source here. (See p. 3-4.)

42. Audio input terminals

Electronically-balanced 47 kΩ, –20 dB*/–60 dB*, Terminal connectors. LINE or MIC input can be selected, and the phantom power supply turned on and off. (See the separate Setting Software Instructions, "Unit Configuration Setting.")
* 0 dB = 1 V

43. MAC address
This is the MAC address* for the unit. Since the relationship of each unit location to its MAC address is established when setting the network attributes, keep track of this relationship for later use.
* The unit's MAC address consists of 12 hyphenated alphanumeric characters.

44. Speaker output terminals
connect speakers to these outputs.

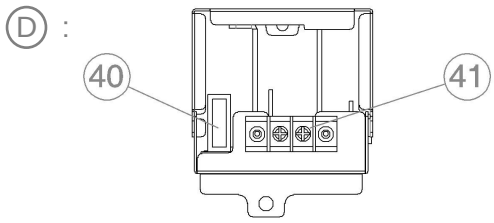
45. Emergency control input terminal
Connect to an automatic fire alarm system and activate emergency broadcasts, play back/stop automatic emergency announcements and reset emergency broadcasts./
Two isolated voltage inputs which activates when the polarity of the applied voltage (24 V Dc is kept applied to this terminal under normal condition) is reversed.

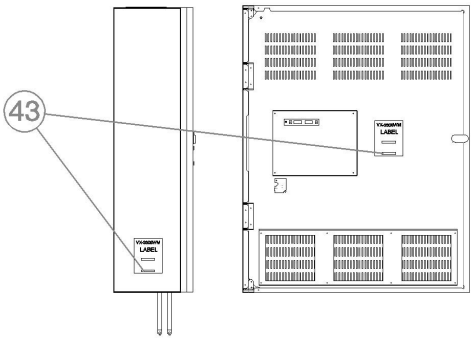
46. Control output connectors
These 9 Pin connectors permit the VX-3308WM to control other connected external equipment.

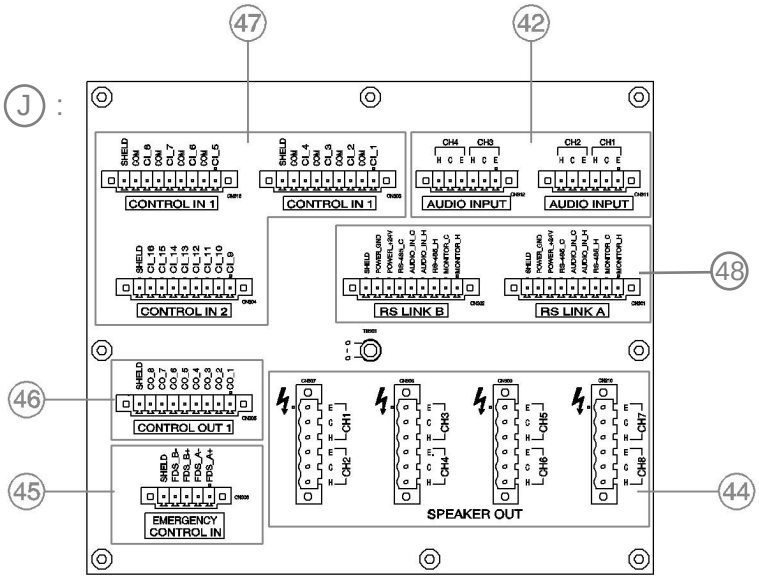
47. Control input connectors
These 9 Pin connectors receive activation signals from external equipment to enable external VX-3308WM control.
Alternatively, these connectors become EOL inputs by setting.

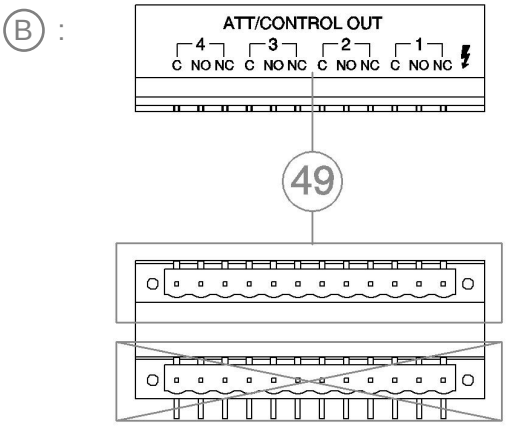
48. RS LINK connectors
Connect the RM-200SF fireman's microphone or RM-300X remote microphone to these connectors.
Note
Only one RM-200SF can be connected to each connector if the system is required to comply with EN54-16.

49. ATT/Control output terminals
These terminals permit the VX-3000 system to control other connected external equipment.
Alternatively, these terminals become attenuator control outputs by setting.









50. DC output terminal

Supplies DC power to power amplifier modules or other DC-operated devices.
(max. 33 VDC , max. 30 A)

51. DC FUSE

Blade fuse 30 A

52. LAN link connectors

The two LAN connectors (LAN A, LAN B) can be connected directly to external VX-3000F or VX-3308WM devices or switching hubs via Cat5 (or higher) cables.

Alternatively, you can replace this PCB with an Ethernet switch of the IES-2000 or IES-3000 series from ORing Industrial Networking. To do so,

- remove the RJ45 plugs from the PCB,
- remove the PCB from the rail
- mount the Ethernet switch on the rail
- connect the RJ45 plugs to any of the Ethernet switch's RJ45 jacks.

After connection completion, press the Reset key to reactivate the VX-3000F. For details refer to chapter 5. VX-3000 Connection on page 3-63, or contact your TOA dealer for more information.

53. Air Break Switch

This switch is the AC-mains power breaker of VX-3308WM as well as the AC-mains terminal.

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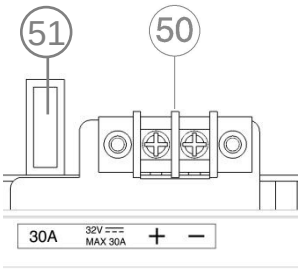

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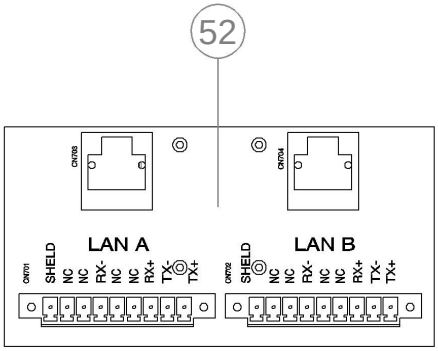

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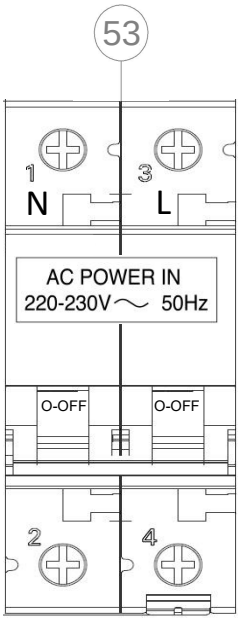
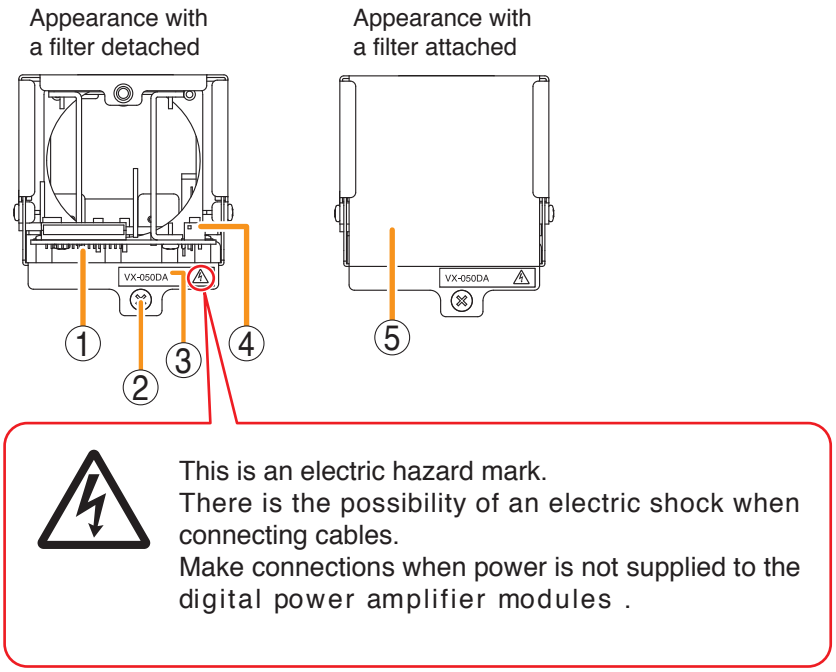


2. DIGITAL POWER AMPLIFIER MODULE

- The VX-3308WM comes with two pre-installed digital power amplifier modules VX-030DA. Alternatively the power amplifier modules VX-015DA can be used.
- They are module types with 1 channel of class-D digital power amplifier, which contributes to energy-saving and light weight design.
- One power amplifier module can be used as a standby amplifier.

2.1 [Front]



1. DA control link connector
Connect this connector to the DA control link connector of the VX-3308WM to which this module is installed using the supplied harness.

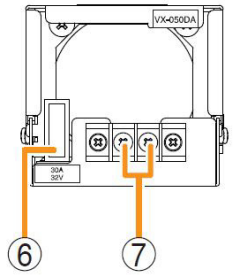
2. Fixing screw
Fixes the module to the VX-3308WM.

3. Model number indication

4. DA output link connector
Connect this connector to the DA output link connector of the VX-3308WM to which this module is installed using the supplied harness.

5. Filter
Before installing the power amplifier into VX-3308WM, please remove the filter .

2.2 [Rear]



6. Fuse

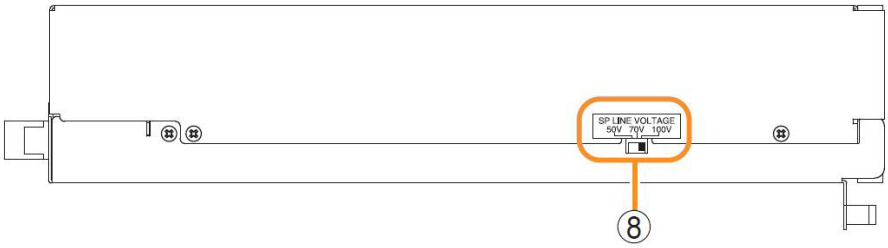
Use a blade fuse described below depending on the power amplifier's rated output.

VX-015DA : 10 A
VX-030DA : 20 A

7. DC power input terminal

Connect VX-3308WM DC power supply to this terminal.

2.3 [Left Side]



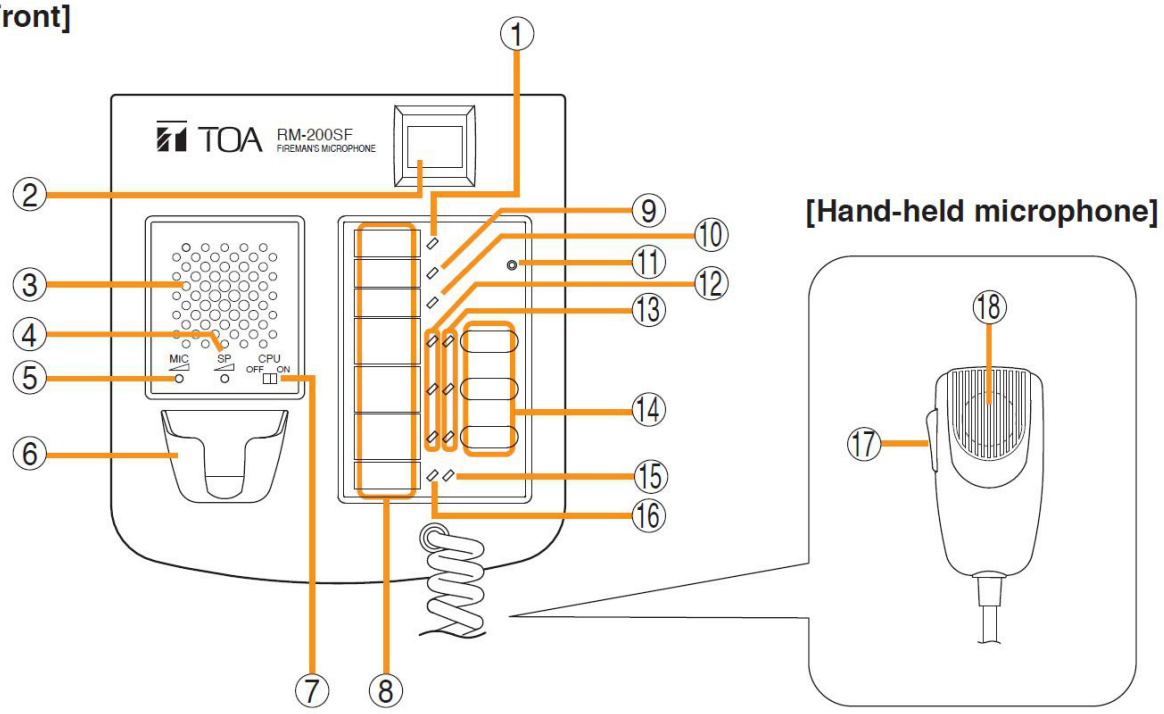
8.Output voltage selection switch

Used to select power amplifier's rated output voltage.

3. RM-200SF FIREMAN'S MICROPHONE

- The RM-200SF Fireman's Microphone features 3 function keys, 1 emergency key, 1 talk key, and the indicator lamps associated with these keys. Functions are assigned to the function keys using the VX-3000 Setting Software.
- Specially designed for both emergency and general purpose broadcast applications, the Fireman's Microphone can be used for push-button zone selection and microphone broadcasts.
- VX-3000 setting software permits desired functions to be assigned to individual Function keys (equipped with 2 LED indicators).
- Up to 4 RM-320F Remote Microphone Extension units can be used with each RM-200SF Remote Microphone.
- Up to 2 RM-200SF Fireman's Microphones can be connected within a VX-3308WM.
- The CPU switch enables all-zone emergency broadcasts from the RM-200SF Fireman's Microphone, even when the CPU malfunctions.
- Failures of Emergency buttons and signal (both control and audio) path between the microphone (including the internal microphone element) and the VX-3308WM are automatically detected.

3.1 [Front]



1. Power indicator (Green)
Lights when the power is turned on.

2. Emergency key
Assign the function concerning the emergency broadcast to this key using the VX-3000 Setting Software.
This key lights or flashes depending on the assigned function.

3. Monitor speaker
Used to monitor current broadcasts.

4. Monitor speaker volume control
Adjusts the volume of the built-in monitorspeaker (3).

5. Microphone volume control
Adjusts the input sensitivity of the Hand-held microphone.

6.Microphone hanger
Used to hold the unit's Hand-held microphone.

7.CPU switch
Normally set to ON. (factory-preset: ON)
Setting this switch to OFF in combination with the DIP switch (20) setting on the bottom surface allows the all-zone emergency broadcast to be made using a hand-held microphone by way of analog transmission not via the CPU control.

8.Indication label insert slot
The label can be printed using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "PRINTING LABELS FOR REMOTE MICROPHONES.")

9. Failure indicator (Yellow/Red)
Flashes yellow if some problem within the system is detected.
This indicator will light yellow if the signal to the VX-3308WM to which the RM-200SF is connected is interrupted for 5 seconds or more.
Lights red when the unit is placed in reset state by pressing the Reset Switch (11).

10. CPU indicator (Red)
Lights red when any one of the CPU switches on the RM-200SFS connected within the system is set to OFF or when the all-zone emergency broadcasts is being made by any one of the RM- 300XS connected within the system.

11. Reset switch
used to reactivate the RM-200SF unit.
Holding down both this switch and the R3 key of the Function keys (14) for 2 seconds or more causes the Failure Indicator (9) to light red, placing the RM-200SF in reset state.

12. Status indicators (Red/Yellow/Green)
Light, flash, or go off depending on the current operation state of function keys, failure state or emergency state. (See the separate Operating Instructions, "INDICATOR STATUS OF REMOTE MICROPHONES.")

13.Selection indicators (Green)
Light or go off depending on the current operation state of function keys. (See the separate Operating Instructions, "INDICATOR STATUS OF REMOTE MICROPHONES.")

14.Function keys (R1 – R3)
Positioned in top-down order (R1, R2, R3). Pressing a specific function key executes the function that has been assigned to that key by the VX-3000 Setting Software. Assignment of functions to specific keys is done using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "RM Event Settings.")

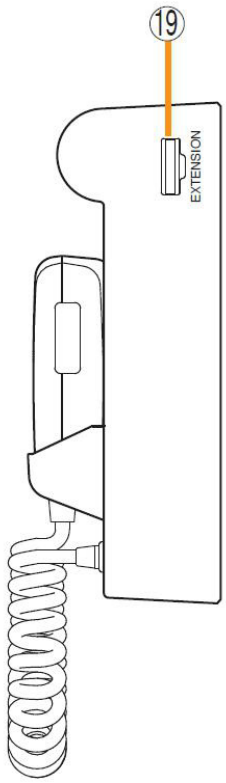
15.Microphone indicator (Green)
Lights or goes off depending on the current operation state of the Talk key.

16.Broadcast Status Indicator (Yellow/Green)
Lights, flashes, or goes off depending on the current operation state of the Talk key.

17.Talk key
Press this key to broadcast a voice announcement. It must be pressed continuously for the duration of the broadcast.
The talk key operation method is fixed to "PTT," and can not be changed.

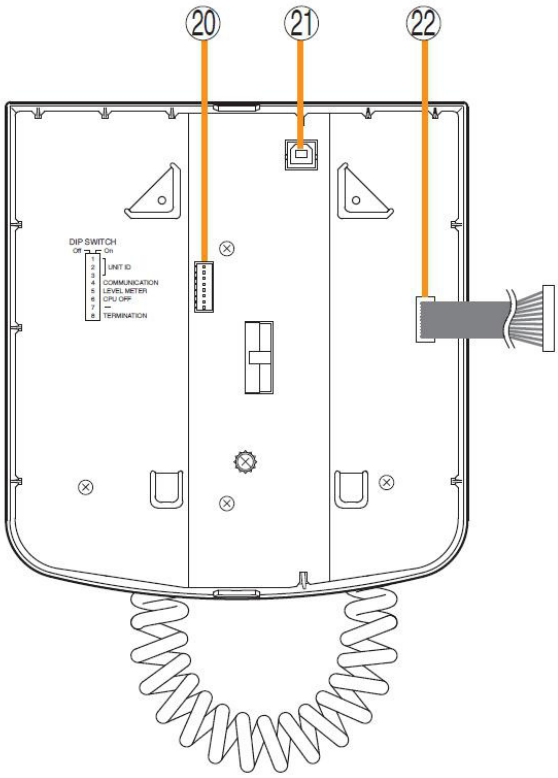
18.Microphone
Used for voice announcements.

3.2 [Side]

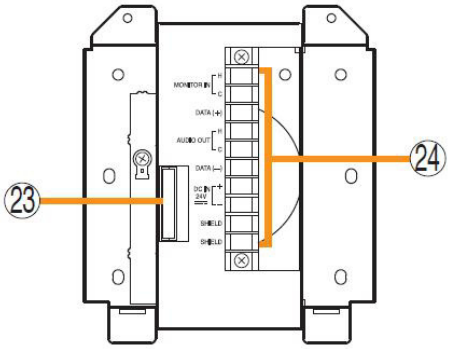


19. RM-320F connection terminal
Connect the RM-320F Remote Microphone Extension unit to this terminal. (See p. 2-13.)

3.3 [Rear]



[wall mount bracket unit (Accessory)]



20. DIP switch

Used for setting the RM-200SF unit.

- **Switches 1 – 3 [UNIT ID]**
  Set the RM-200SF's device number (ID number). (See p. 3-9.)
- **Switch 4 [COMMUNICATION]**
  Not used. Normally set to OFF.
- **Switch 5 [LEVEL METER]**
  Changes a broadcast status indicator (12) into an output signal level indicator. (See p. 3-15.)
- **Switch 6 [CPU off]**
  Sets whether the CPU off function (all-zone emergency broadcasts) is enabled or disabled. (See p. 3-17.)
- **Switch 7**
  Not used. Normally set to OFF .
- **Switch 8 [TERMINATION]**
  Sets the termination of the RM communication line (control communication lines between the VX-3308WM and the RM-200SF). Normally set to OFF.(See p. 3-18.)

Note

By default, switches 1 – 5 and 7 are set to OFF, and switches 6 and 8 to ON.

21. USB terminal

Not used.

22. Extension connector

Connect this connector to the extension connector(23) of the Wall mount Bracket unit (accessory). (See p. 3-25.)

23.Extension connector

Connect the cable extending from the RM-200SF to this connector. (See p. 3-25.)

24.Screw terminal block

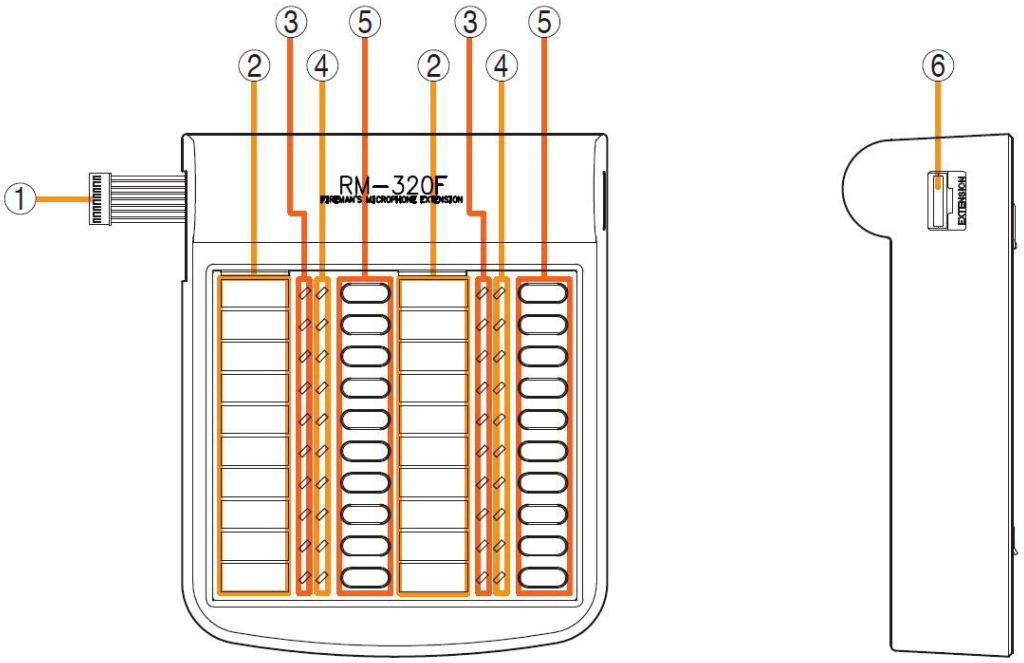
- **Audio monitor line [MONITOR IN]**
  connect the audio monitor input line from the VX-3308WM to the RM-200SF.
- **RM communication line [DATA]**
  Connect the control communication line between the VX-3308WM and the RM-200SF.
- **Audio output line [AUDIO OUT]**
  Connect the audio signal output line from the RM-200SF to the VX-3308WM.
- **DC power input [DC IN 24 V]**
  Used to supply Dc power from the VX-3308WM to the RM-200SF.
- **Shield [SHIELD]**
  Used for the control line through which the VX-3308WM confirms the RM-200SF's connection.
  Be sure to connect at least one of two terminals to the VX-3308WM.

4. RM-320F FIREMAN'S MICROPHONE EXTENSION

Each connected RM-320F Extension unit adds 20 function keys to the base RM-200SF.

[Front]

[Side]



1.Connection cable
Used for connection to the RM-200SF or other RM-320F.

2.Indication label insert slot
The label can be printed using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "PRINTING LABELS FOR REMOTE MICROPHONES.")

3.Status indicators (Red/Yellow/Green)
Light, flash, or go off depending on the current operation state of function keys.

4.Selection indicators (Green)
Light or go off depending on the current operation state of function keys.

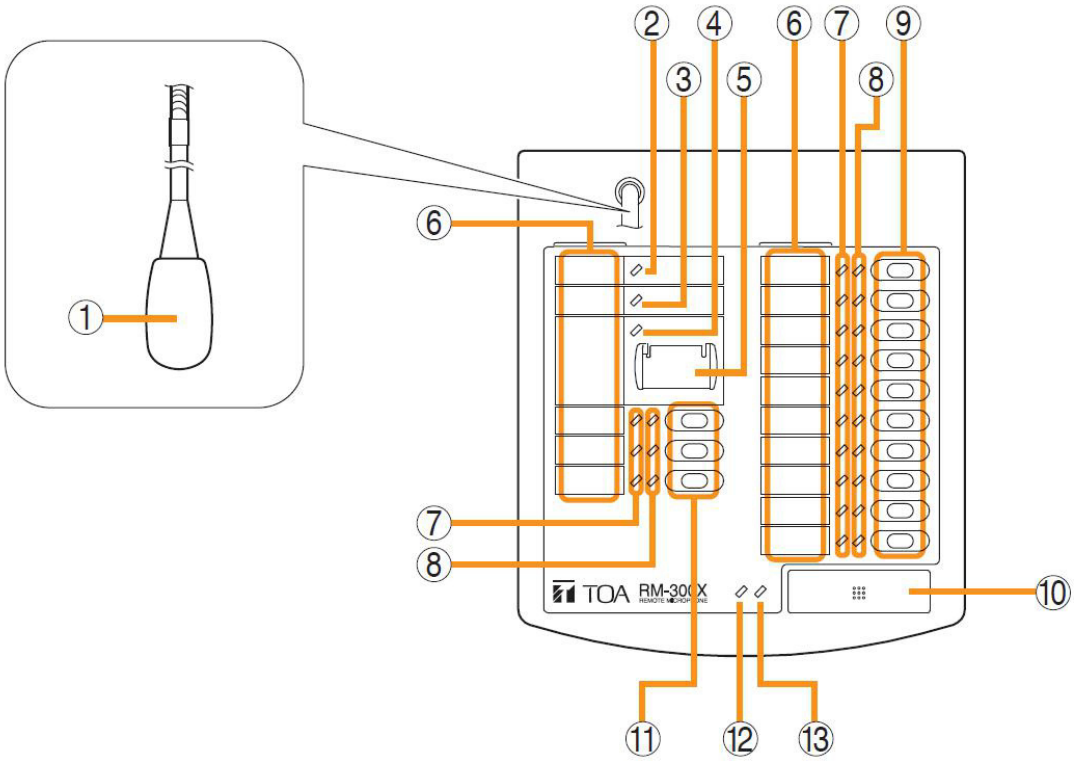
5.Function keys (1 – 20)
Keys are numbered from 1 to 10 from upper left to bottom and from 11 to 20 from upper right to bottom.
Pressing a specific function key executes the function that has been assigned to that key by the VX-3000 Setting Software. Assignment of functions to specific keys is done using the VX-3000 Setting Software.
(See the separate Setting Software Instructions, "RM Event Settings.")

6.RM connection terminal [EXTENSION]
Connect the other RM-320F to this terminal.

5. RM-300X REMOTE MICROPHONE

- The RM-300X Remote Microphone features 13 function keys, 1 covered key, 1 talk key, and the indicator lamps associated with these. Functions are assigned to the function keys using the VX-3000 Setting Software.
- VX-3000 setting software permits desired functions to be assigned to individual Function keys (equipped with 2 LED indicators).
- Connecting RM-210F Remote Microphone Extension (maximum 7) to the RM-300X expands the number of function keys and indicators in blocks of 10.
- Up to 8 RM-300X Remote Microphones can be connected within a VX-3308WM.
- The DIP switch setting enables all-zone emergency broadcasts from the RM-300X Remote Microphone, even when the CPU malfunctions.

5.1 [Top]



1. Microphone
Used for voice announcements.

2. Power indicator (Green)
Lights when the power is turned on.

3. Failure indicator (Yellow/Red)
Flashes yellow if some problem within the system is detected.
This indicator will light yellow if the signal to the VX-3308WM to which the RM-300X is connected is interrupted for 5 seconds or more.
This indicator will light red while the all-zone emergency broadcasts is being made (p. 3-15) or the RM-300X is in the reset process.

4. Emergency indicator (Red)
Lights or flashes depending on the function assigned to the Emergency key.

5. Emergency/all-zone emergency broadcast key (covered)
[function concerning the emergency broadcast]
Assign the function concerning the emergency broadcast to this key using the VX-3000 Setting Software.
[function concerning the all-zone emergency broadcast]
Independently of settings made by the VX-3000 Setting Software, holding down this key for 4 seconds or more in combination with DIP switch (14) setting causes the CPU to be bypassed, enabling the all-zone emergency broadcast to be made by way of analog transmissions. (See p. 3-13.)

6. Indication label insert slots
Labels can be printed using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "PRINTING LABELS FOR REMOTE MICROPHONES.")

7. Status indicators (Red/Yellow/Green)
Light, flash, or go off depending on the current operation state of function keys, failure state or emergency state. (See the separate Operating Instructions, "INDICATOR STATUS OF REMOTE MICROPHONES.")

8. Selection indicators (Green)
Light or go off depending on the current operation state of function keys. (See the separate Operating Instructions, "INDICATOR STATUS OF REMOTE MICROPHONES.")

9. Function keys (R1 – R10)
Positioned in top-down order (R1, R2 ... R10). Pressing a specific function key executes the function that has been assigned to that key by the VX-3000 Setting Software.
Assignment of functions to specific keys is done using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "RM Event Settings.")

10. Talk Key
Press this key to broadcast a voice announcement. If the Talk key is set to "PTT " ("press-to-talk") mode, then it must be pressed continuously for the duration of the broadcast.

If the Talk key is set to "Lock" mode, then it must be pressed once to turn the microphone on at the beginning of a broadcast, then pressed again to turn the microphone off once the broadcast is finished.

The microphone can also be set to sound a chime at the beginning and/or end of each broadcast.

The Talk key mode ("PTT" or "Lock") and the chime function are set using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "Unit Configuration Setting.")

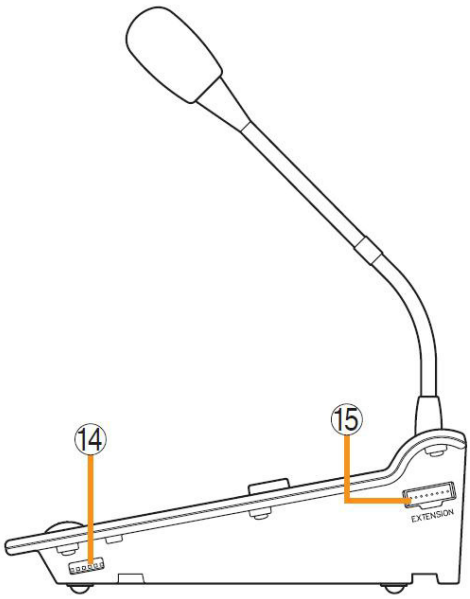
11. Function keys (L1 – L3)
Positioned in top-down order (L1, L2, L3).

These keys operate in the same manner as the Function keys (R1 – R10) (9).

12. Broadcast status indicator (Yellow/Green)
Lights, flashes, or goes off depending on the current operation state of the Talk key.

13. Microphone indicator (Green)
Lights or goes off depending on the current operation state of the Talk key. Flashes while the chime is being activated.

5.2 [Side]



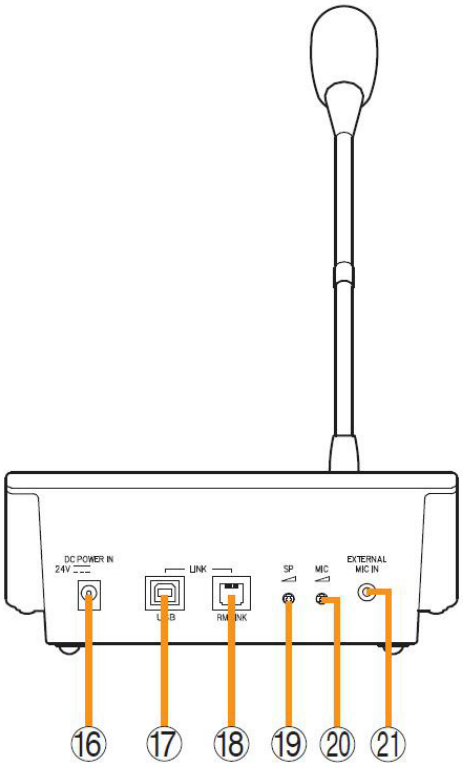
14. DIP switch
Used for setting the RM-300X unit.

- **Switches 1 – 3**
  Sets the RM-300X's device number (ID number). (See p. 3-13.)
- **Switch 4**
  Changes a broadcast status indicator (12) into an output signal level indicator. (See p. 3-15.)
- **Switch 5**
  Sets whether the CPU off function (all-zone emergency broadcasts) is enabled or disabled. (See p. 3-17.)
- **Switch 6**
  Not used.

Note
By default, switches 1 – 4 and 6 are set to OFF and switch 5 to ON.

15. RM-210F connection terminal [EXTENSION]
Directly connect the RM-210F Remote microphone Extension unit to this terminal. (See p. 3-32.)

5.3 [Rear]



16. Power input terminal [DC POWER IN]
Connect an optional AD-246 AC adapter to this terminal when extending cable length.
(See p. 3-50.)
Power is usually supplied to the RM-300X and RM-210F from the VX-3308WM.

17.USB terminal
Not used.

18. RM link connector
Used to connect an VX-3308WM via a STP category 5 cable.

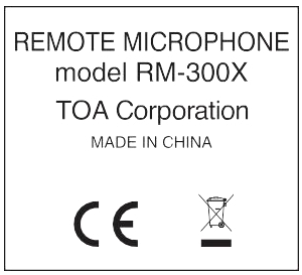
19. Speaker volume control
Adjusts the volume of the built-in speaker.

20. Microphone volume control
Adjusts the volume of the microphone (1) and the external microphone connected via the external microphone input terminal (21).

21. External microphone input terminal
Audio input jack to use as an external microphone input*1 or AUX input
Jumper settings on the circuit board must be changed depending on the input sources.
(See p. 3-15, p. 3-17.)
[Specifications used as External microphone input]
–40 dB*2, 2.2 kΩ, unbalanced, mini-jack, and phantom power.
[Specifications used as AUX input]
–20 dB*2, 4.7 kΩ, unbalanced, mini-jack.

*1 The WH-4000A, YP-M101, or YP-M301 can be used for the external microphone.
*2 0 dB = 1 V

Note

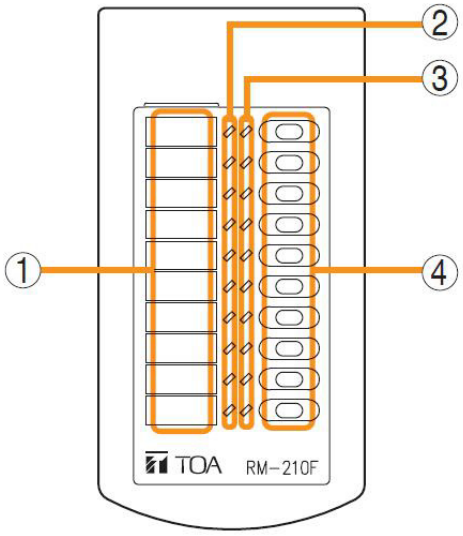


The Equipment marking label shown at left is affixed to the unit's bottom side.

6. RM-210F REMOTE MICROPHONE EXTENSION

Each connected RM-210F Extension unit adds 10 function keys to the base RM-300X.

6.1 [Top]



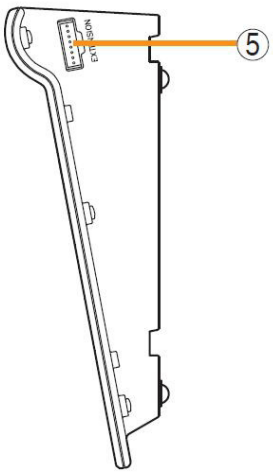
1. Indication label insert slot
The label can be printed using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "PRINTING LABELS FOR REMOTE MICROPHONES.")

2. Status indicators (Red/Yellow/Green)
Light, flash, or go off depending on the current operation state of function keys.

3. Selection indicators (Green)
Light or go off depending on the current operation state of function keys.

4. Function keys (1 – 10)
Positioned in top-down order (1, 2 ... 10).
Pressing a specific function key executes the function that has been assigned to that key by the VX-3000 Setting Software.
Assignment of functions to specific keys is done using the VX-3000 Setting Software. (See the separate Setting Software Instructions, "RM Event Settings.)

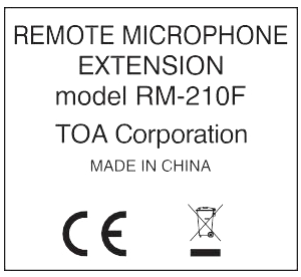
6.2 [Side]



5. RM connection terminal [EXTENSION]
Connect the RM-300X or other RM-210F to this terminal. (See p. 3-32.)

Note
Another same terminal is on the other side.

Note

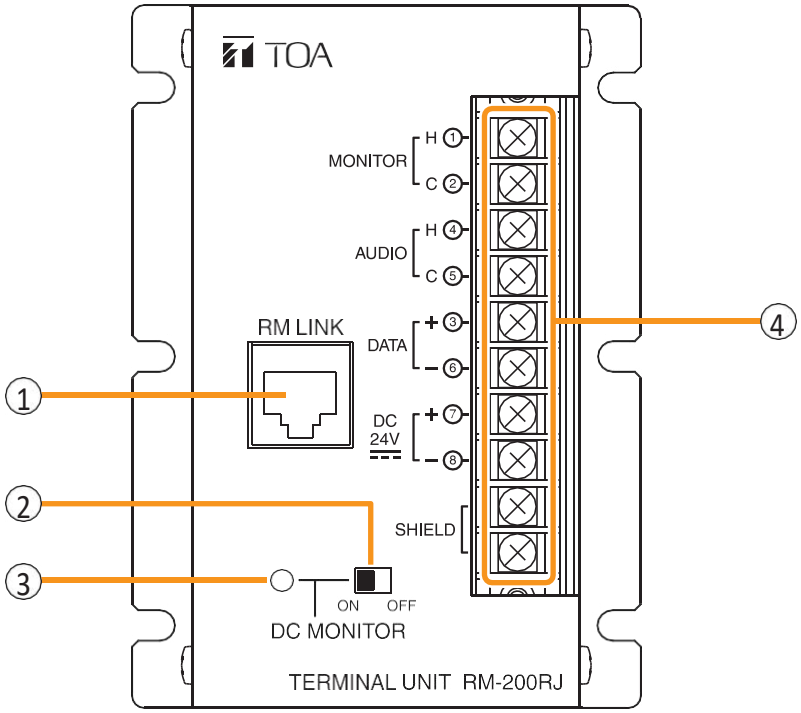


The Equipment marking label shown at left is affixed to the unit's bottom side.

7. RM-200RJ TERMINAL UNIT

Convert the RJ45 connector into a screw terminal block. It is used to connect between a trunk cable (such as CPEV cable) and a feeder cable (such as LAN cable) in wiring a remote microphone.

[Front]



1.RM link terminal

Connect to the RM link terminal of the RM-300X or VX-3308WM.

2.Power monitor switch

Set to ON to enable the Power monitor indicator. (factory-preset: ON)

3.Power monitor indicator (Green)

Lights if the source voltage of the DC power input exceeds the minimum operating voltage of the RM- 300X when the Power monitor Switch is set to ON.

4.Screw terminal block

The Screw terminal block and RM link terminal are internally connected in parallel. Numbers 1 through 8 indicated beside each terminal correspond to the pin numbers of the RJ45 connector to be connected to the RM link terminal (1).

- **Audio monitor terminals [MONITOR H/C]**

  Connect the audio monitor line from the VX-3308WM to the RM-300X.

- **Audio output terminals [AUDIO H/C]**

  Connect the audio output line from the RM-300X to the VX-3308WM.

- **RM communication terminals [DATA +/–]**

  Connect the control communication line between the VX-3308WM and the RM-300X.

- **DC power input terminals [DC 24 V +/–]**

  Used to supply DC power from the VX-3308WM to the RM-300X.

- **Shield terminals [SHIELD]**

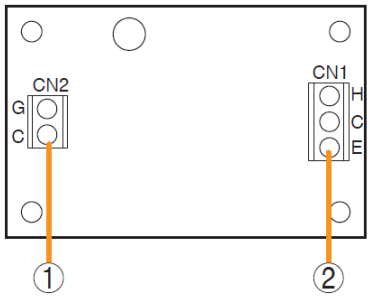
  Connect the shield wires for noise reduction or for system control.

  Be sure to connect at least one shield wire.

8. VM-300SV END OF LINE UNIT

Speaker line failure can be detected when an EOL unit is connected between the speaker line end and the control input terminal of the VX-3308WM.

Note
The Vm-300SV is designed for exclusive use with the VX-3308WM.



1. **Control line connection screw terminal (CN 2)**
   Connect to the VX-3308WM unit's control input terminal.

2. **Speaker line connection screw terminal (CN 1)**
   Connect to the speaker line end.

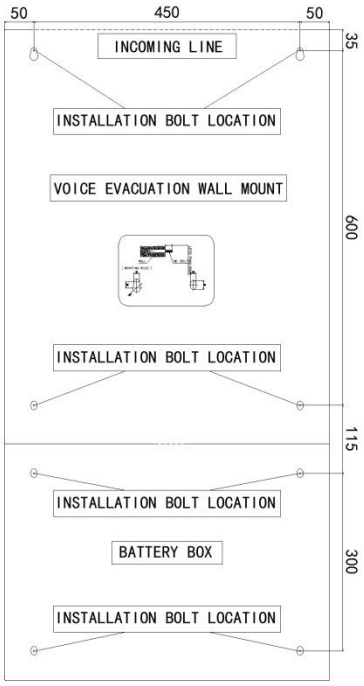
Chapter 3

INSTALLATION AND SETTING PROCEDURES (HARDWARE)

1. VX-3308WM Voice Evacuation Wall Mount

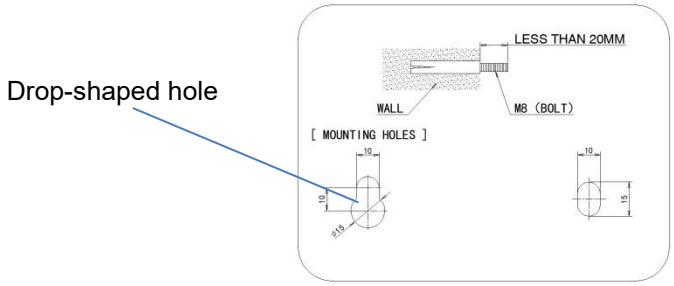
1.1 Install the VX-3308WM VA system on a wall.

Step 1 : Stick a positioning paper on the wall surface.

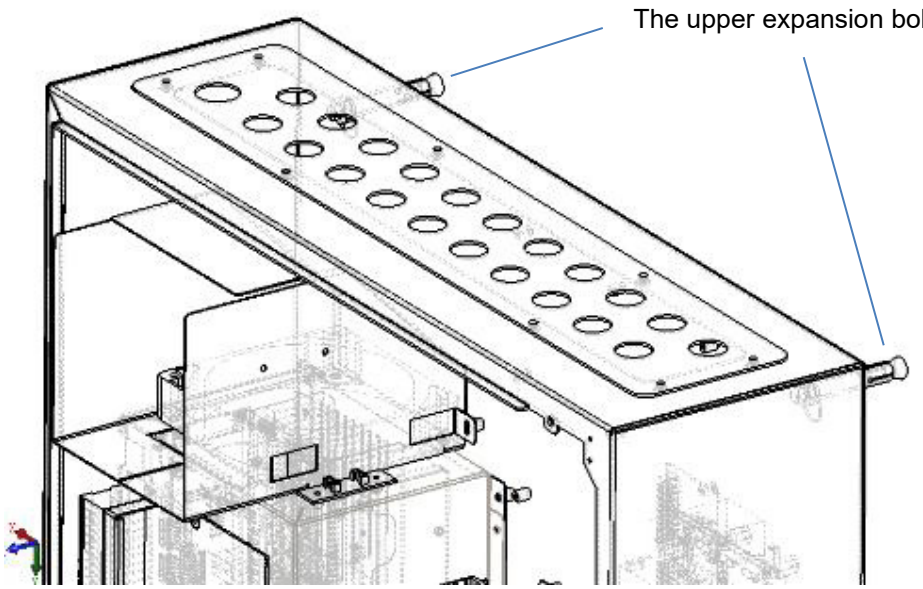


Step 2 : Using an impact drill or an electric hammer and a Ø10 drill bit, drill holes at the location of marking points on the positioning paper.

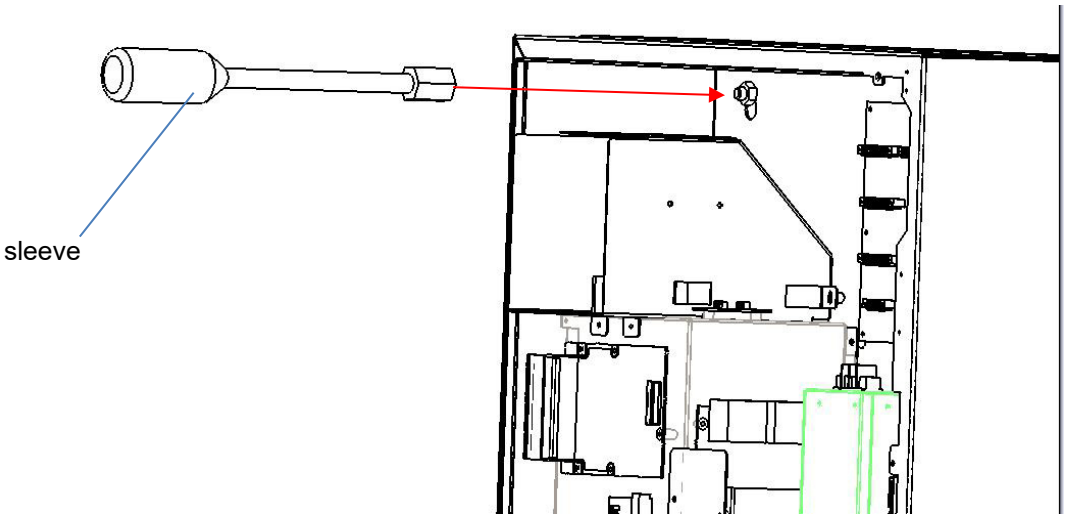
Step 3 : Hammer expansion bolts into the holes in the wall.



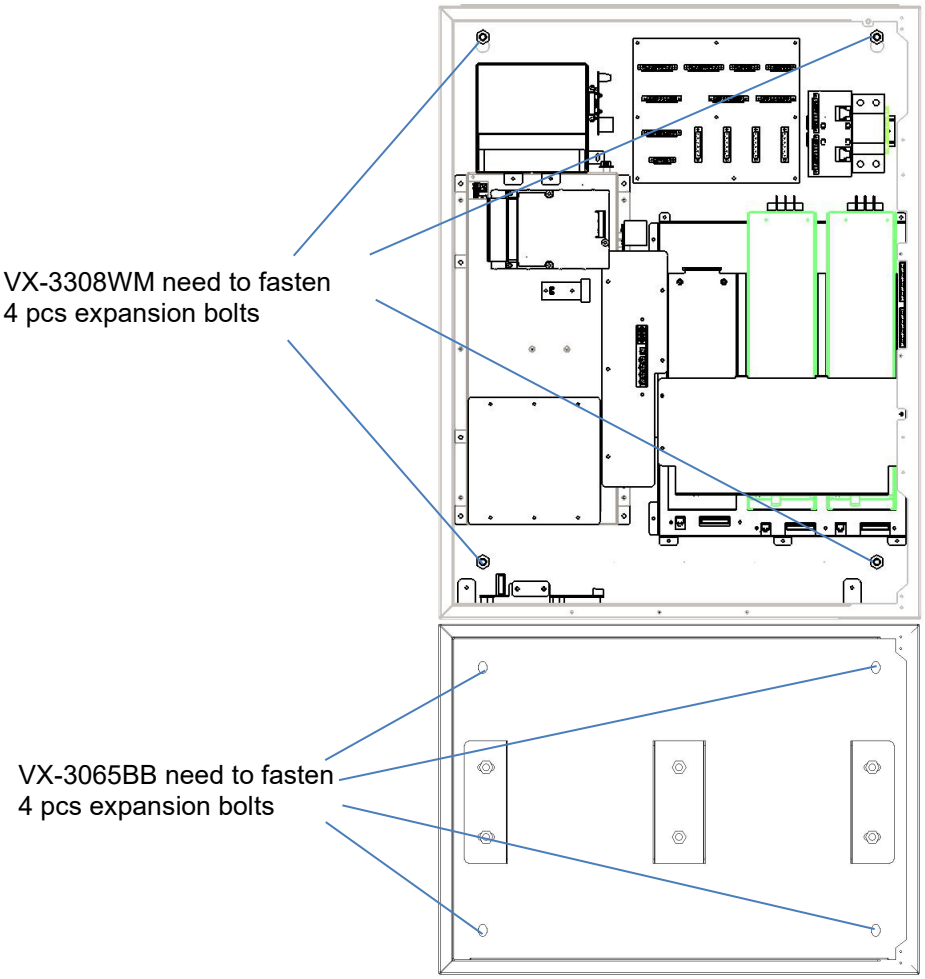
Step 4 : Attach the host to the expansion bolt.



Step 5 : Fasten a nut on expansion bolts using a sleeve.



Step 6 : Install the battery box VX-3065BB on the wall in the same way.



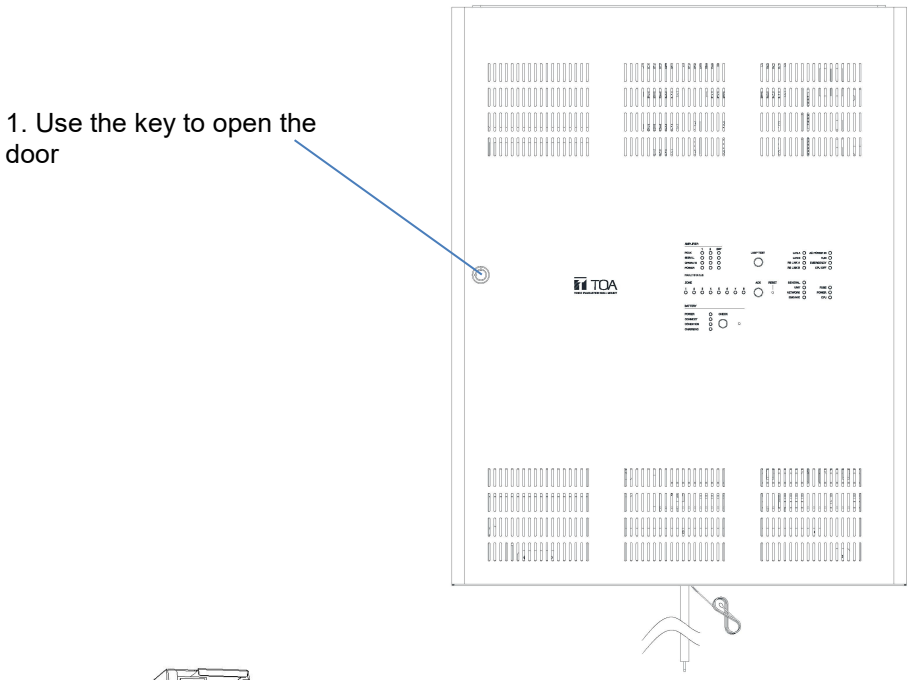
1.2 Installing of an Amplifier Module

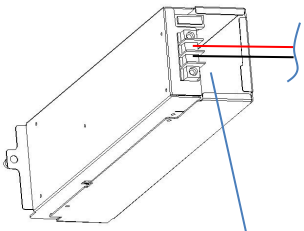
Any of the three digital amplifier modules VX-015DA, VX-030DA can be installed in VX-3308WM. Two VX-030DA are pre-installed. The slot for the amplifier module is free and can be equipped with a No.2 amplifier.

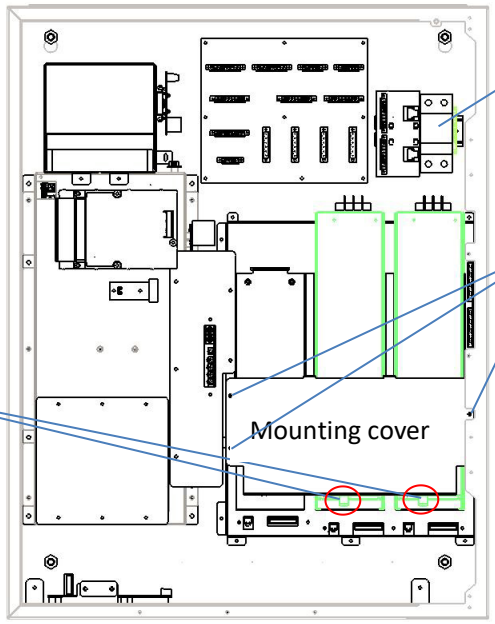
[Power amplifier installation procedure]

⚠ WARNING

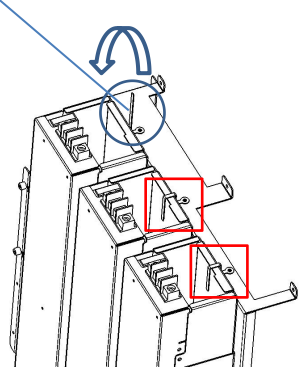
There is a high voltage section inside the power amplifier's filter. Never insert your finger or metallic objects inside the unit. When attaching or detaching the connector, never touch the internal components other than connectors.



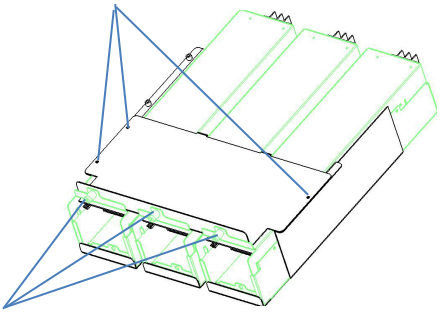




6. Install the extended power amplifier into the power amplifier slot of VX-3308WM，Hook the top of the amplifier with a clasp in the blue ring. (as shown in red box).

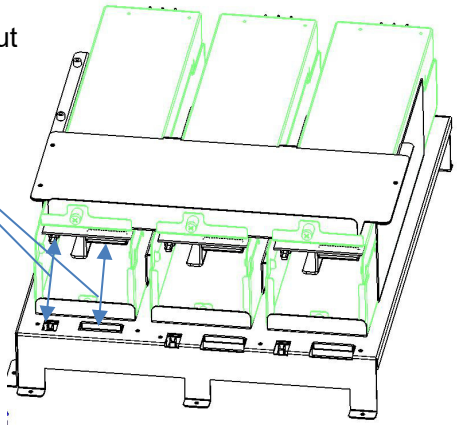


8. Respectively fasten three mounting screws of three power amplifier mounting covers.

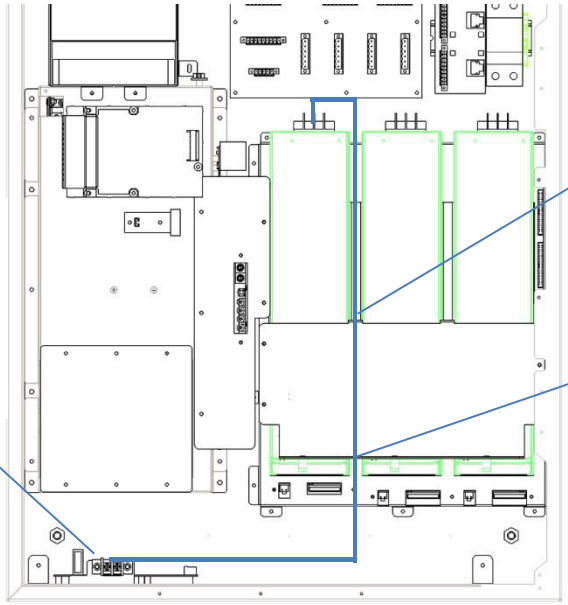


7. Put back the power amplifier mounting cover and fasten set screws of three power amplifiers.

9. Connect input and output wires of power amplifiers.



10. Connect the power supply of power amplifiers to the power supply output terminals of VX-3308WM



Power amplifier power cord should be installed through the power amplifier upper cover line.

Secure the power cord with cable ties

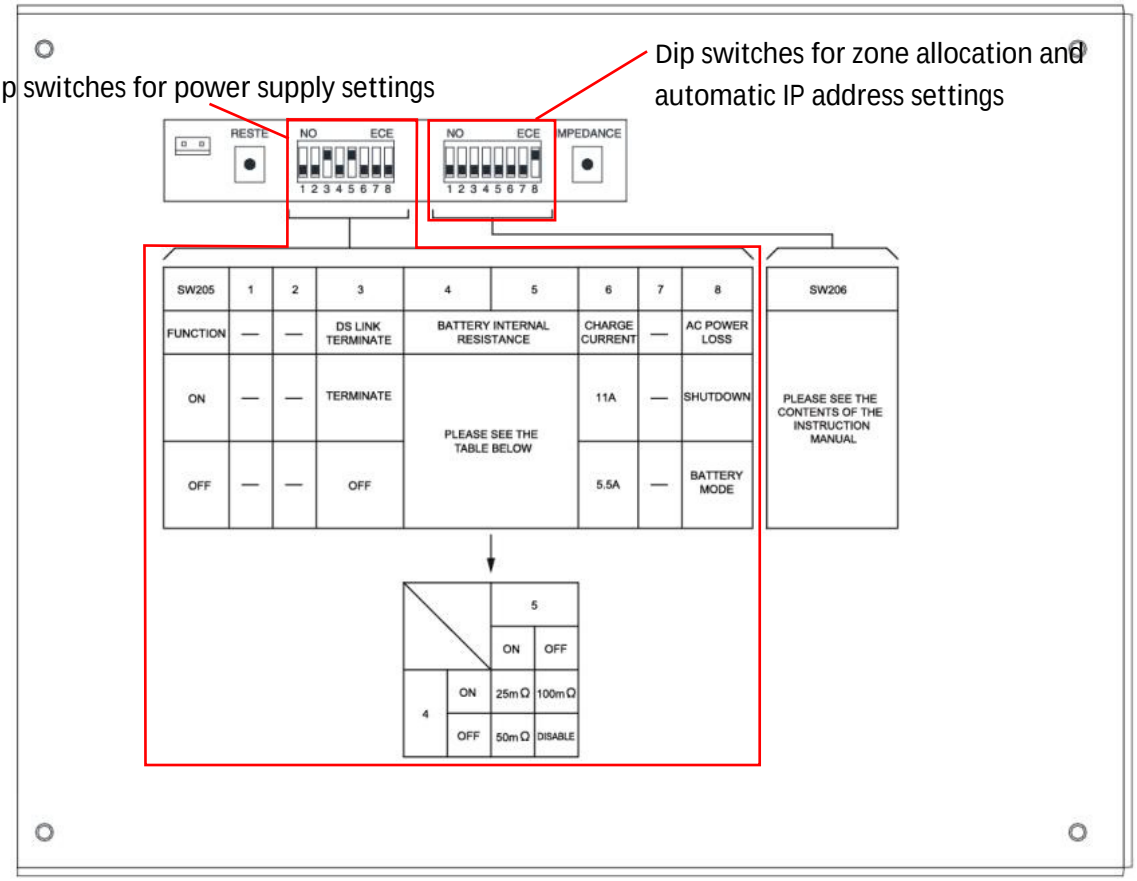
Installation of the extended power amplifier is finished

[Possible configuration and mounting slot port in the VX-3308WM]			
Configuration / Slot nos.	1	2	STANDBY
1 Channel, 8 speaker selectors	•	-	- / •
2 Channel, 8 speaker selectors	•	•	- / •

1.3 Access to DIP Switch setting

Step 1. Use the key to open the door.

Step 2. Set the DIP switch.
Set the DIP switch so that power amplifier modules and Zone configurations are obtained as intended.



Step 3 Close the door and lock the door with the key.

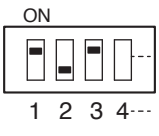
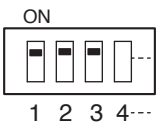
1.4 Zone Allocation Setting

For the VX-3308WM, the preset relationship between broadcast zones and power amplifiers can be changed by the settings of the DIP switch inside the back of front panel. You can perform the zone allocation settings for all-zone emergency broadcast at CPU off state.

Note

For normal broadcasts, use the VX-3000 Setting Software to perform this setting.

[Power amplifier modules inside the VX-3308WM and output zone configuration]

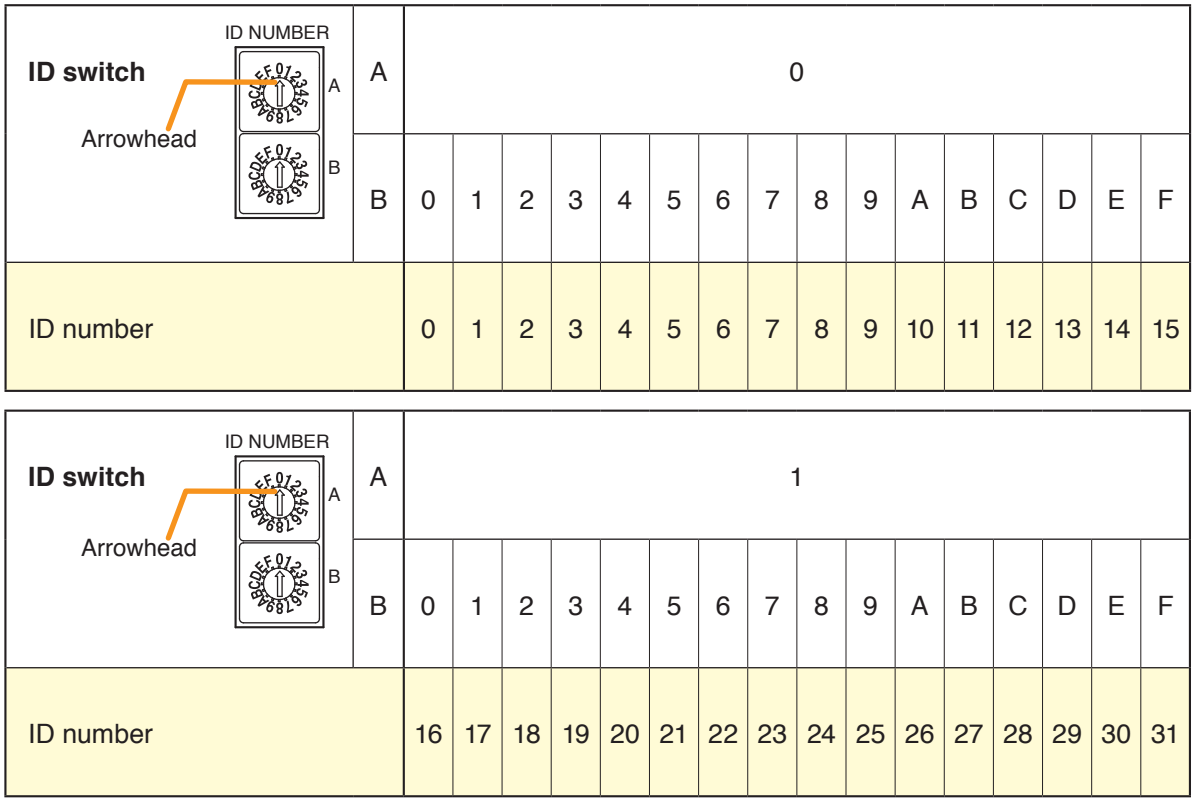
Switch 1	Switch 2	Switch 3	Figure	Power amplifier module and output zone configuration
OFF	OFF	OFF		Allocates the Slot 1's amplifier output to Zones 1 through 8.
ON	OFF	OFF		Allocates the Slot 1's amplifier output to Zones 1 through 7 and the Slot 2's amplifier output to Zone 8.
OFF	ON	OFF		Allocates the Slot 1's amplifier output to Zones 1 through 6 and the Slot 2's amplifier output to Zones 7 and 8.
ON	ON	OFF		Allocates the Slot 1's amplifier output to Zones 1 through 5 and the Slot 2's amplifier output to Zones 6 through 8.
OFF	OFF	ON		Allocates the Slot 1's amplifier output to Zones 1 through 4 and the Slot 2's amplifier output to Zones 5 through 8.
ON	OFF	ON		Allocates the Slot 1's amplifier output to Zones 1 through 3 and the Slot 2's amplifier output to Zones 4 through 8.
OFF	ON	ON		Allocates the Slot 1's amplifier output to Zones 1 and 2 and the Slot 2's amplifier output to Zones 3 through 8.
ON	ON	ON		Allocates the Slot 1's amplifier output to Zone 1 and the Slot 2's amplifier output to Zones 2 through 8.

1.5 ID Number Setting

Notes

- When setting the ID number for multiple VX-3308WM units, assign different numbers to each unit. The ID number that can be used must not exceed the actual number of VX-3308WM units set using the VX-3000 Setting Software.
- If an ID number is duplicated, then the VX-3308WM units assigned that number cannot be controlled by the VX-3308WM system.
- The VX-3308WM set to ID "0" plays a role of a leader in the whole system, displaying the "GENERAL FAULT" indication and outputting its signal when malfunction occurs within the system.
- In a single VX-3308WM configuration, set the ID number to "0."

Step 1. Use the key to open the door.
Step 2. Set the ID switches(37).



A	0															
B	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ID number	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

A	1															
B	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ID number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

1.6 Setting the IP Address

VX-3308WM's IP address is automatically determined depending on the ID switch setting as follows when the switch 8 of the DIP switch 2 (32) at the backside the front panel is set to the ON position (default setting).

IP address : 192.168.14.xx ("xx" is one larger than ID Number.)
Subnet mask : 255.255.255.0
Default gateway : 0.0.0.0

To change the above IP address of the VX-3308WM, change the DIP switch setting and reactivate the VX-3308WM following the procedures below.

Note

When the switch 8 is set to the ON position, even if you change and upload the IP address using the VX-3000 Setting software, it will not be changed, remaining as set by default.

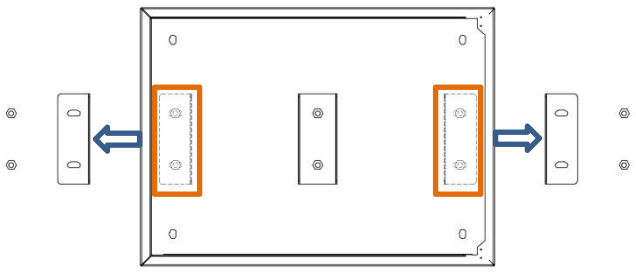
2. Battery Box

2.1 Installing Battery

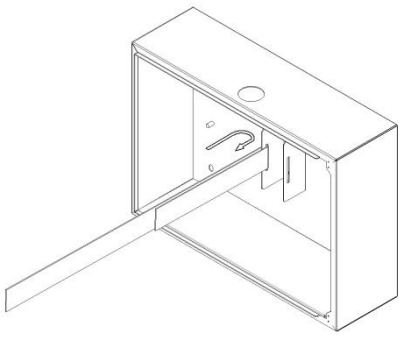
⚠ WARNING

- Take special care to prevent the battery from being shorted by misconnection of the battery cable. If the short occurs, the unit may fail. Follow the instructions in this section for safe and secure connection.
- Be sure to switch off the system power before battery connection. For the procedure, refer to p. 24 “SWITCHING OFF SYSTEM POWER (DC)”
- After completing the battery connection, be sure to attach a terminal cover onto each battery terminal to prevent shorts between positive and negative terminals.

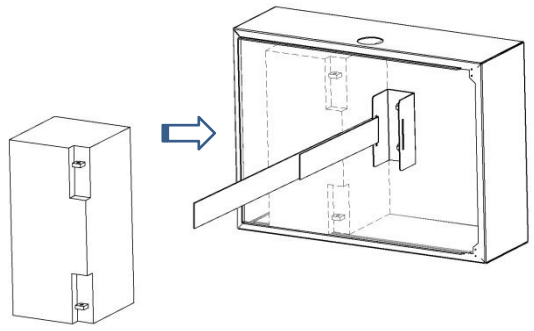
Step 1: Release the nuts of the battery fixtures on either side and remove them.



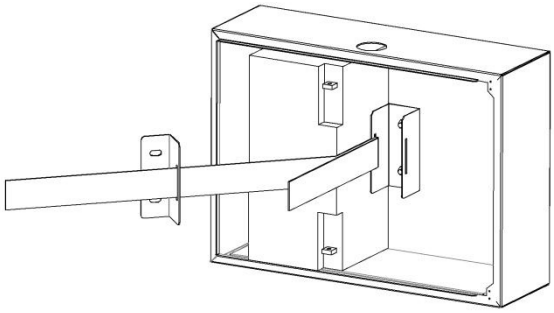
Step 2: Pass the magic stick through the battery fixture in the middle.



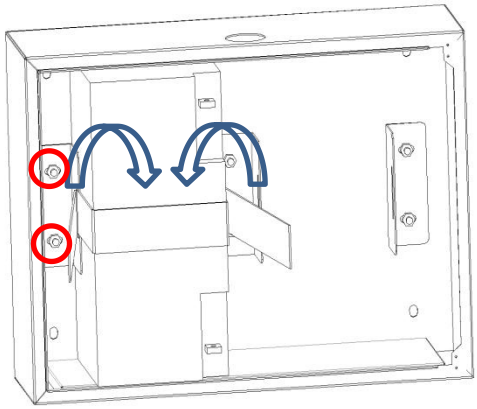
Step 3: Place the battery in the battery box as shown below.



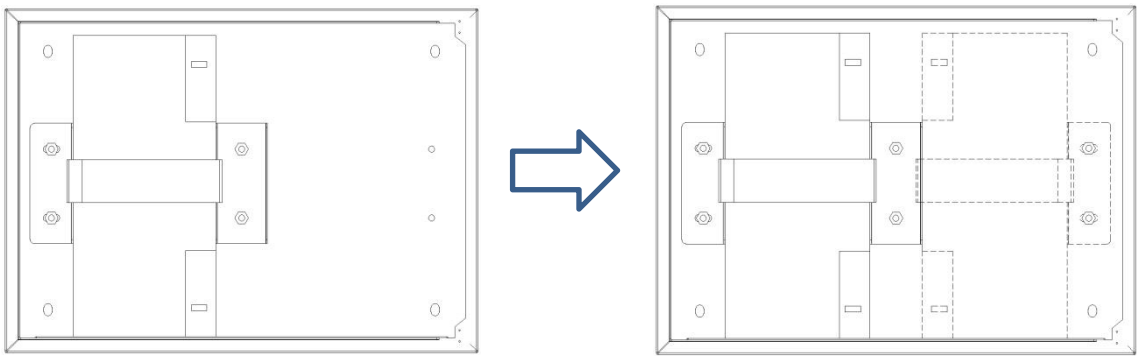
Step 4: Put the left magic stick through the battery side of the fixture.



Step 5: Press the battery on the left side of the fixture and lock it, and fasten the magic fastening button.



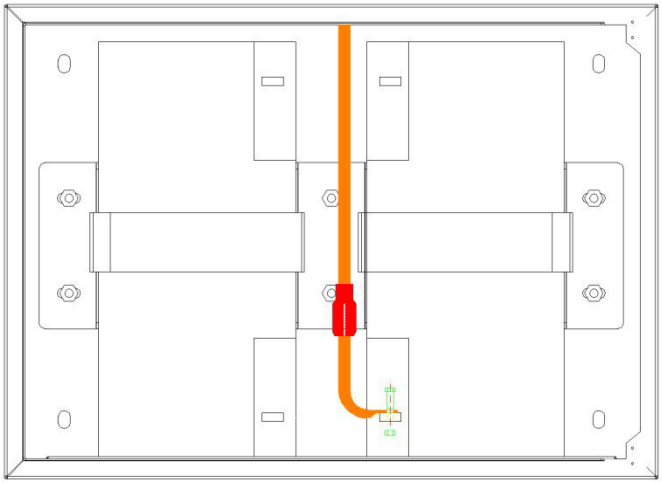
Step 6: The following figure shows the left battery fixed, and the way of installing the right battery as the left.



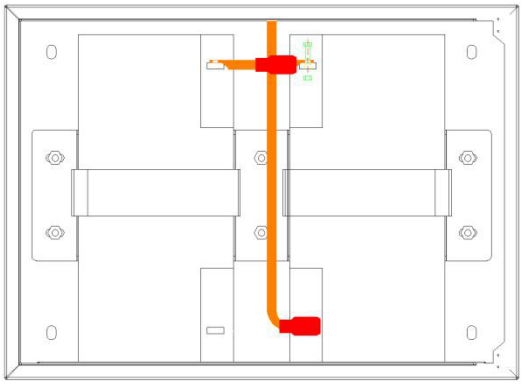
[Connecting the battery]

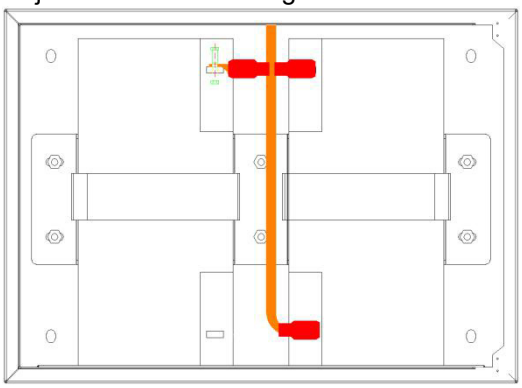
> **⚠ CAUTION** Note correct polarity (positive and negative orientation) when connecting the power supply cord. Reversed polarity connections will cause damage to the system.

Step 1 Insert the insulating sleeve into the positive (red) battery line, and use bolts to secure the positive battery line with the positive battery terminal. Cover the joint with an insulating condom.

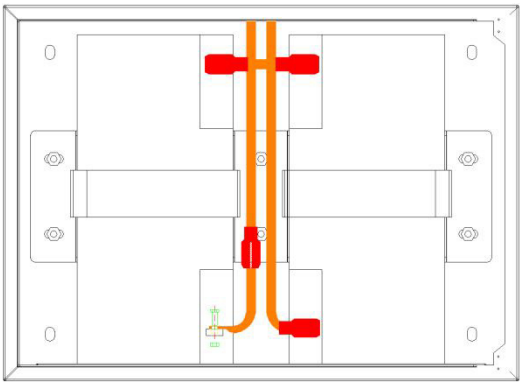


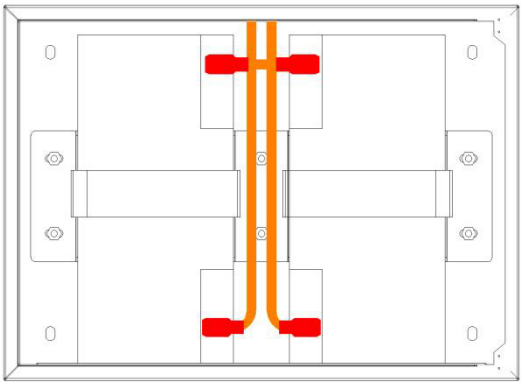
Step 2 Insert the insulating sleeve into the attached battery connector, and use bolts to fix the attachment battery connector to the negative battery terminal. Cover the joint with an insulating condom.





Step 3 Insert the insulating sleeve into the attached battery connector and bolt the attachment battery connector to the positive battery terminal. Cover the joint with an insulating condom.



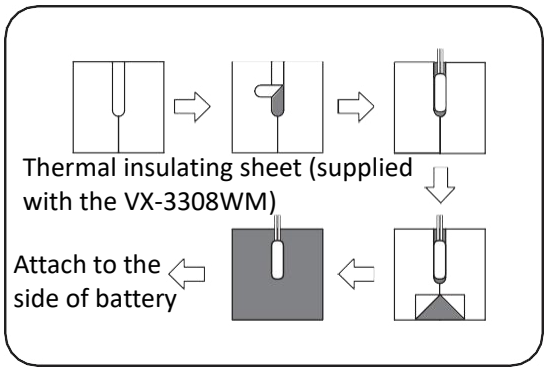


Step 4 Insulate the sleeve through the negative (black) battery line and use bolts to secure the negative battery line with the negative battery terminal. Cover the joint with an insulating condom.

2.2 Installing a temperature sensor

Step 1. Clean the exterior surface of the battery using a soft damp cloth.
Note: Avoid using chemical cleaners and solvents that may cause the battery cases to clack or leak.

Step 2. Follow the procedure shown above to attach the temperature sensor to the battery.



Disconnect battery connection

Step 1. Confirm that battery power is not in use by means of the VX-3308WM front panel BATTERY POWER LED, which is unlit in this case.

Step 2. Loosen the VX-3308WM BATTERY wire negative terminal screw, then pull out the negative battery cable.

Notes

- Never remove the positive cable first to avoid battery short-circuit that occurs if the positive cable should contact the unit chassis or battery box.
- Insulate the exposed end of the removed cable with insulating tape to avoid shorting to the other cable.

Step 3. Remove the positive battery cable from the positive terminal in the same manner as **Step 2**.

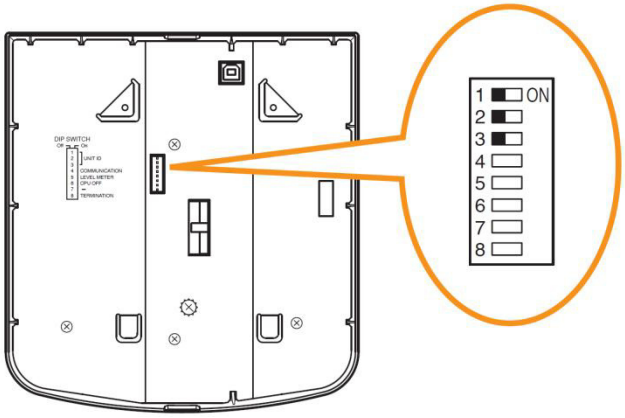
Note

Insulate the exposed end of removed cable with insulating tape to avoid shorting to the other cable.

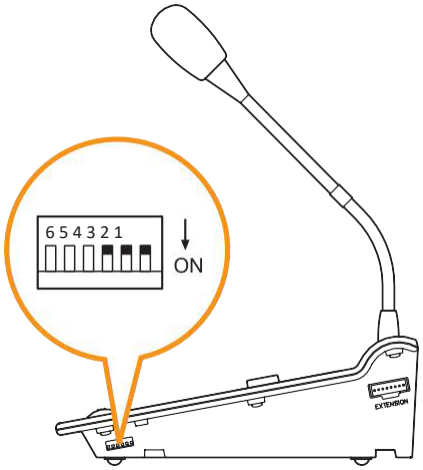
3. RM-200SF AND RM-300X MICROPHONES

3.1. The ID Number Settings (Switches 1 – 3 operation)

Set ID numbers (device numbers) using switches 1 – 3 of the DIP switch located on the7 rear panel of the RM-200SF and the side panel of the RM-300X.



RM-200SF rear



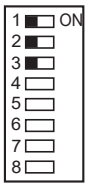
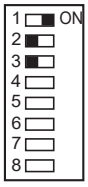
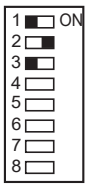
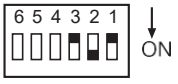
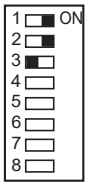
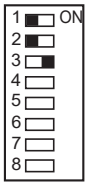
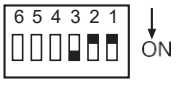
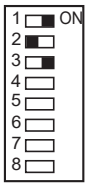
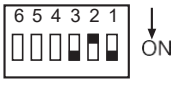
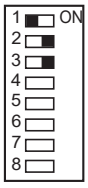
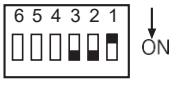
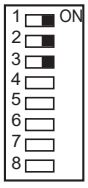
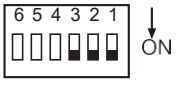
RM-300X side

- A total of up to 8 RM-200SF and RM-300X microphones can be connected per system.
  If the system is required to comply with EN54-16, only a total of up to 2 RM-200SF and/or RM-300M units of the 8 are allowed for connection. (See p. 3-14.)
- An ID Number must be set for each connected Remote microphone. The ID Number must be identical to that which is set by the PC software. On the PC screen, the ID Number appears at the left of the remote microphone symbol.

[Remote microphone on the PC screen]

ID Number

- The ID Number is factory-preset to "0."

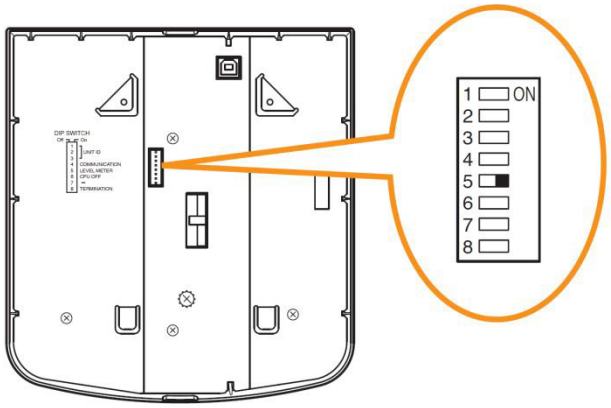
Device number	Switch 3	Switch 2	Switch 1	RM-200SF	RM-300X
0 (Default setting)	OFF	OFF	OFF		
1	OFF	OFF	ON		
2	OFF	ON	OFF		
3	OFF	ON	ON		
4	ON	OFF	OFF		
5	ON	OFF	ON		
6	ON	ON	OFF		
7	ON	ON	ON		

3.2. Adjusting Microphone Sensitivity (RM-200SF: Switch 5 operation or RM-300X: Switch 4 operation)

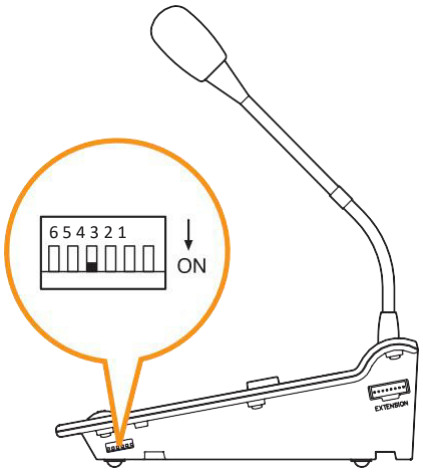
Since the DIP switch can be set to make the broadcast status indicator show output signal level,* adjust the microphone sensitivity using the following procedure:

* When the microphone is in use, the indicator shows the output signal level. When the microphone is not in use, it shows the broadcast status.

Step 1. Set switch 5 of the DIP switch on the rear panel of the RM-200SF to ON or switch 4 on the side panel of the RM-300X to ON.
The broadcast status indicator on front panel of the RM-200SF or top panel of the RM-300X switches to show the output signal level.
Note
Both switches are set to OFF by default.



RM-200SF rear

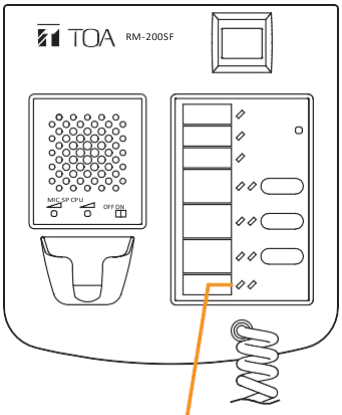


RM-300X side

Step 2. Speak into the microphone.
The broadcast status indicator shows the microphone's output signal level.
The following table shows how the output level is shown.

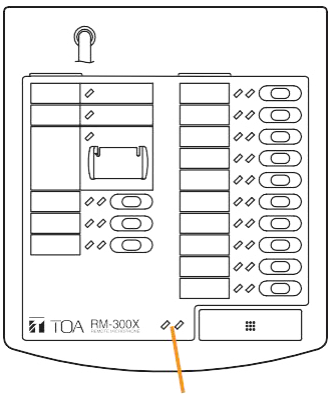
Indicator Color	Output Signal Level	
Lights red	Over 0 dB	
Lights green	–20 dB to 0 dB	Appropriate level
Off	Under –20 dB	

RM-200SF front



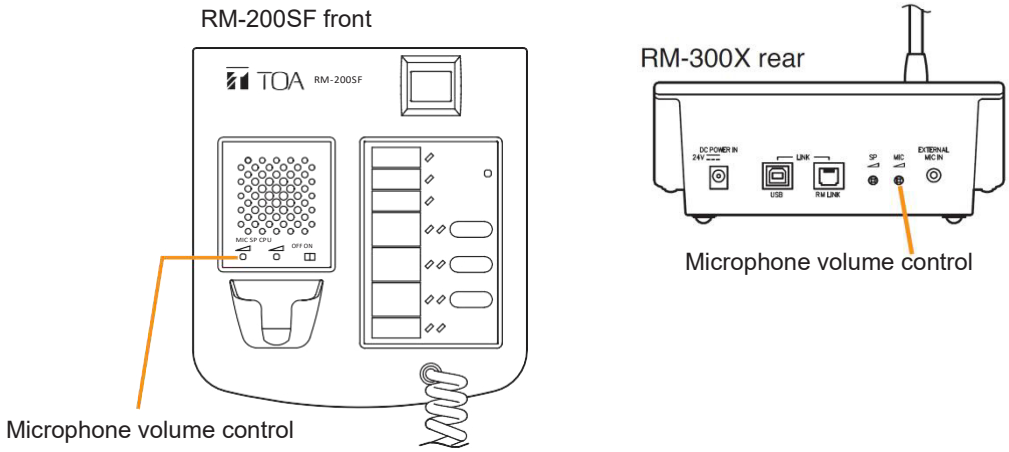
Broadcast status indicator

RM-300X top



Broadcast status indicator

Step 3. using the microphone volume control, adjust the microphone input sensitivity to an appropriate level (until the broadcast status indicator lights green).



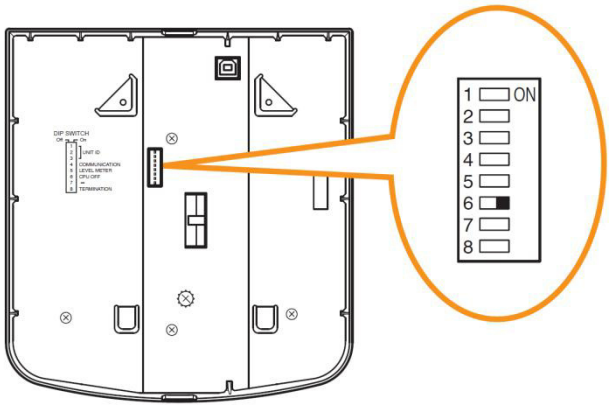
Step 4. Set switch 5 of the RM-200SF to OFF or switch 4 of the RM-300X to OFF.

Note
Be sure to set both switches to OFF after adjusting the microphone input sensitivity.

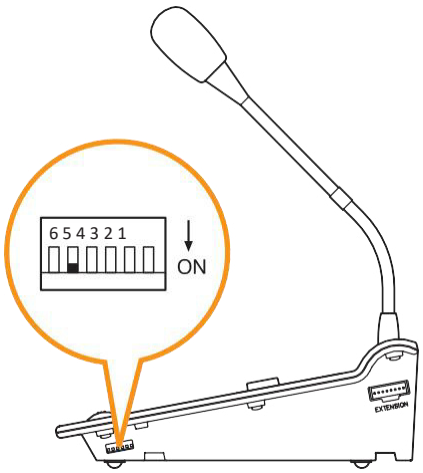
3.3. CPU Off Function (All-Zone Emergency Broadcast) Settings (RM-200SF: Switch 6 operation or RM-300X: Switch 5 operation)

The CPU off function permits the all-zone calls to be made from the RM-200SF or RM-300X by bypassing the CPU* normally used by the VX-3308WM and using an analog link instead. This function is usually used if a system failure is preventing normal broadcasts from being made. Announcement from the RM-200SF can be made to all zones within the system only while the Talk Switch is being pressed with the CPU switch on its front panel set to OFF, or announcement from the RM-300X can be made to the said zones while its All-Zone Emergency Broadcast key is being held down for 4 seconds or more. Whether or not this function is available can be set using switch 6 of the DIP switch on the rear panel of the RM-200SF or switch 5 on the side panel of the RM- 300X. (Regarding how to make such broadcasts, see the separate Operating Instructions, "OPERATION.")

* CPU is a central processing unit, which is built in the VX-3308WM.

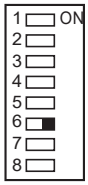
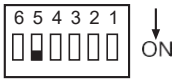
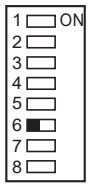
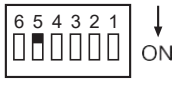


RM-200SF rear



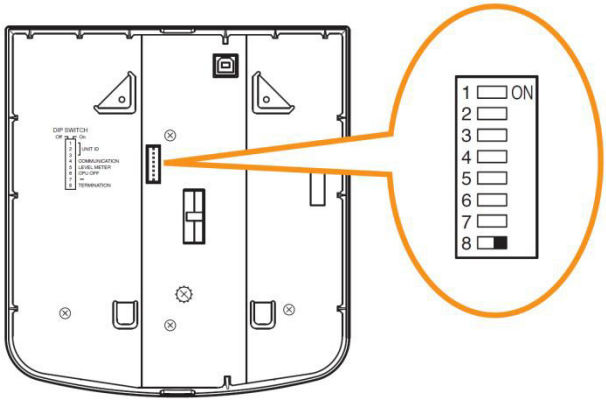
RM-300X side

Note
Set the CPU off function to "Disabled" as in the table below for systems that do not use the analog link.

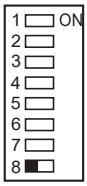
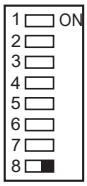
CPU off function (Emergency all-call)	Switch	RM-200SF	RM-300X
Enabled	ON (Default position)		
Disabled	OFF		

3.4. Termination Setting (RM-200SF: Switch 8 operation)

Set the termination of the RM communication line. Normally set to OFF.



RM-200SF rear

Terminal function	Switch	RM-200SF
OFF	OFF	
ON	ON (Default position)	

3.5. Using an External Microphone (RM-300X Only)

⚠ WARNING This change should only be performed by a qualified professional electrician. If users open the unit case or modify the unit, this may cause fire or electric shock.

Changing the jumper settings on the RM-300X's circuit board causes an external microphone to be used.

Notes
- Turn off the power before starting this work.
- To avoid damage from static electricity, never touch the parts on the circuit board.
- An external microphone input and an auxiliary input (see p. 3-21) cannot be used at the same time.

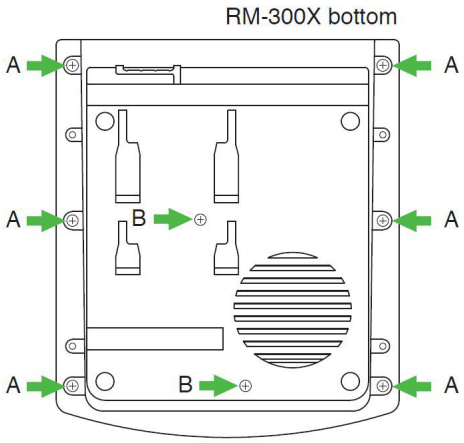
Step 1. Unscrew 8 screws indicated by arrows in the figure at right, then detach the RM-300X's upper case.

Note

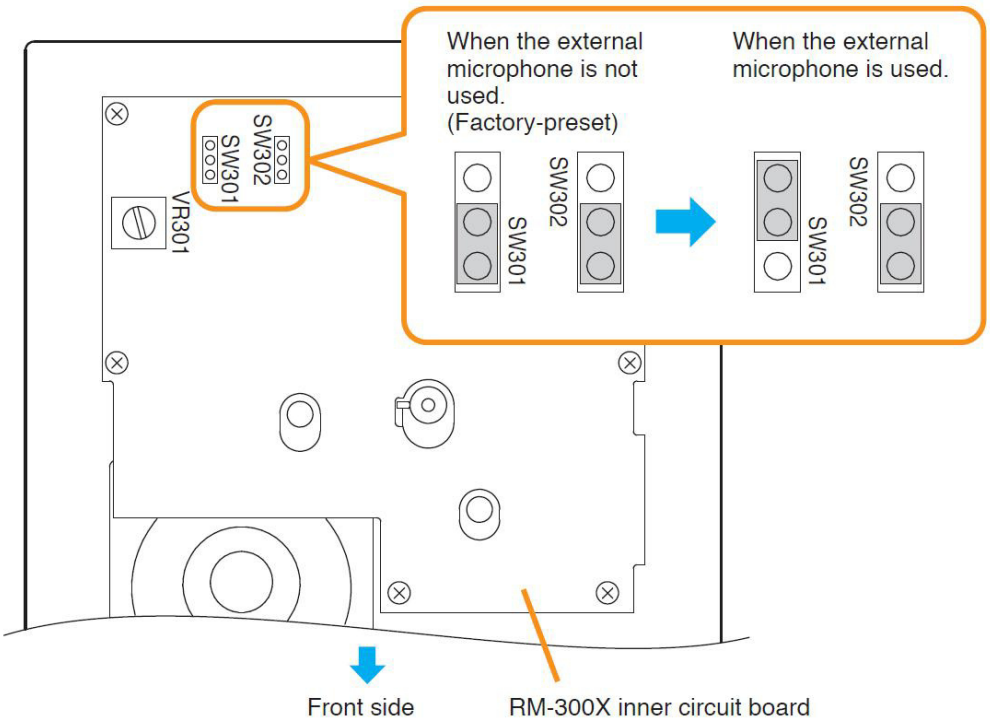
Note the types of screws.

A: 3 x 8 tapping screw (white silver) ..... 6 pieces

B: 3 x 10 tapping screw (black) ..... 2 pieces



Step 2. Set the jumper's position (SW301 and SW302) on the circuit board attached to the bottom plate as shown below.



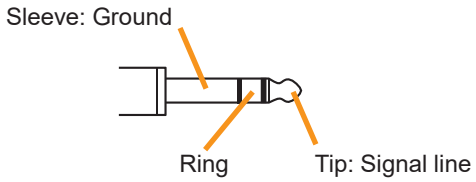
Step 3. Replace the RM-300X's upper case.

Note
Note the types of screws when replacing the upper case (See **Step 1**.)

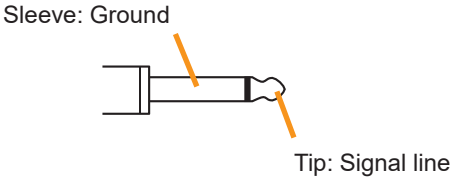
[Plug for connection to the RM-300X's external input terminal]

Connect the microphone's signal line to the tip and its shield line to the sleeve of the stereo mini plug or monaural mini plug.

[Stereo mini plug]



[Monaural mini plug]



Tip: The WH-4000A, YP-M101, or YP-M301 can be used for the external microphone.

3.6. Using an Auxiliary Input (RM-300X Only)

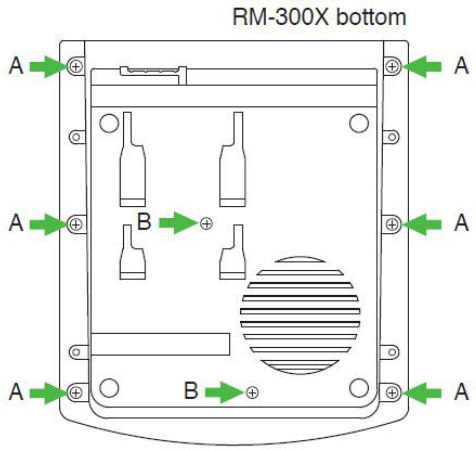
> **⚠ WARNING** This change should only be performed by a qualified professional electrician. If users open the unit case or modify the unit, this may cause fire or electric shock.

Changing the jumper settings on the RM-300X's circuit board causes an auxiliary input to be used. Adjust the sound volume of the AUX input with the VR301 on the pc board.

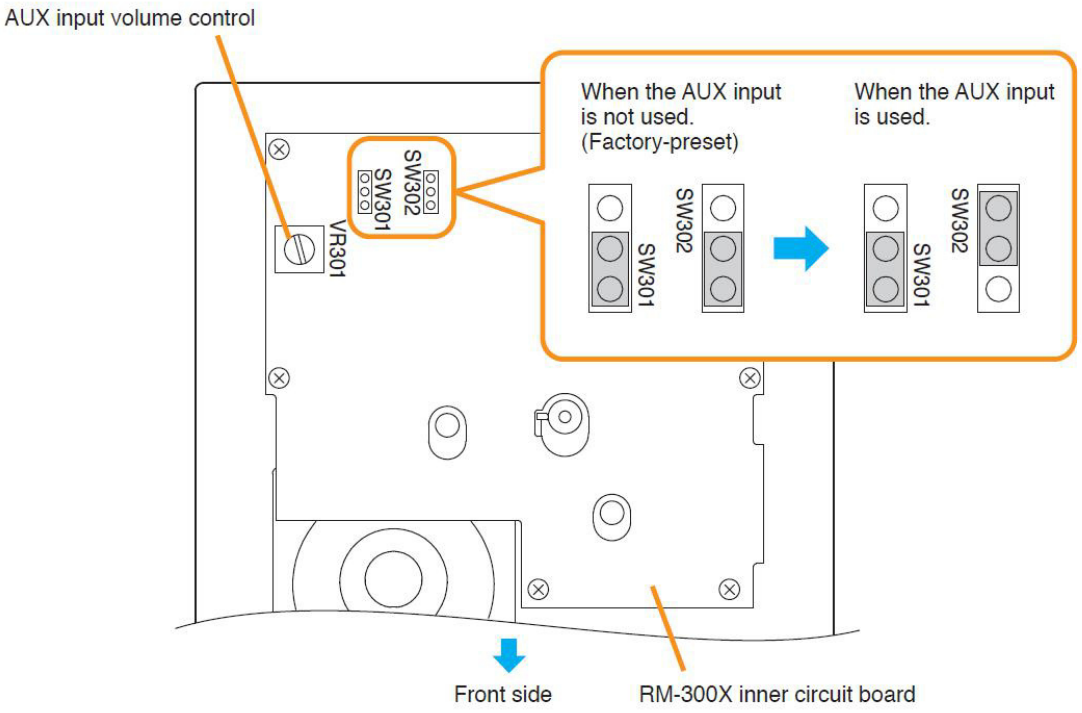
Notes
- Turn off the power before starting this work.
- To avoid damage from static electricity, never touch the parts on the circuit board.
- An external microphone input (see p. 3-19) and an auxiliary input cannot be used at the same time.

Step 1. Unscrew 8 screws indicated by arrows in the figure at right, then detach the RM-300X's upper case.

Note
Note the types of screws.
A: 3 x 8 tapping screw (white silver) ..... 6 pieces
B: 3 x 10 tapping screw (black) ..... 2 pieces



Step 2. Set the jumper's position (SW301 and SW302) on the circuit board attached to the bottom plate as shown below.



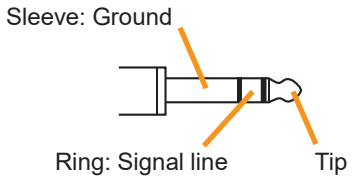
Step 3. Replace the RM-300X's upper case.

Note
Note the types of screws when replacing the upper case (See **Step 1.**)

[Plug for connection to the RM-300X's external input terminal]

Connect the sound source's signal line to the ring and its shield line to the sleeve of the stereo mini plug.

[Stereo mini plug]



3.7. Compressor Function Setting

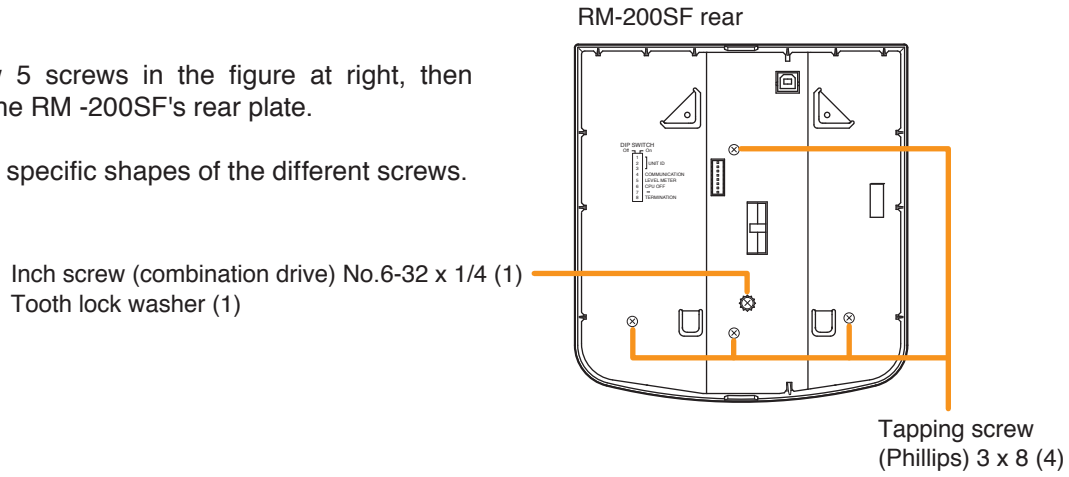
⚠ WARNING This change should only be performed by a qualified professional electrician. If users open the unit case or modify the unit, this may cause fire or electric shock.

The compressor function enables even large signals to be broadcast without distortion. (This function is factory-preset to ON.)

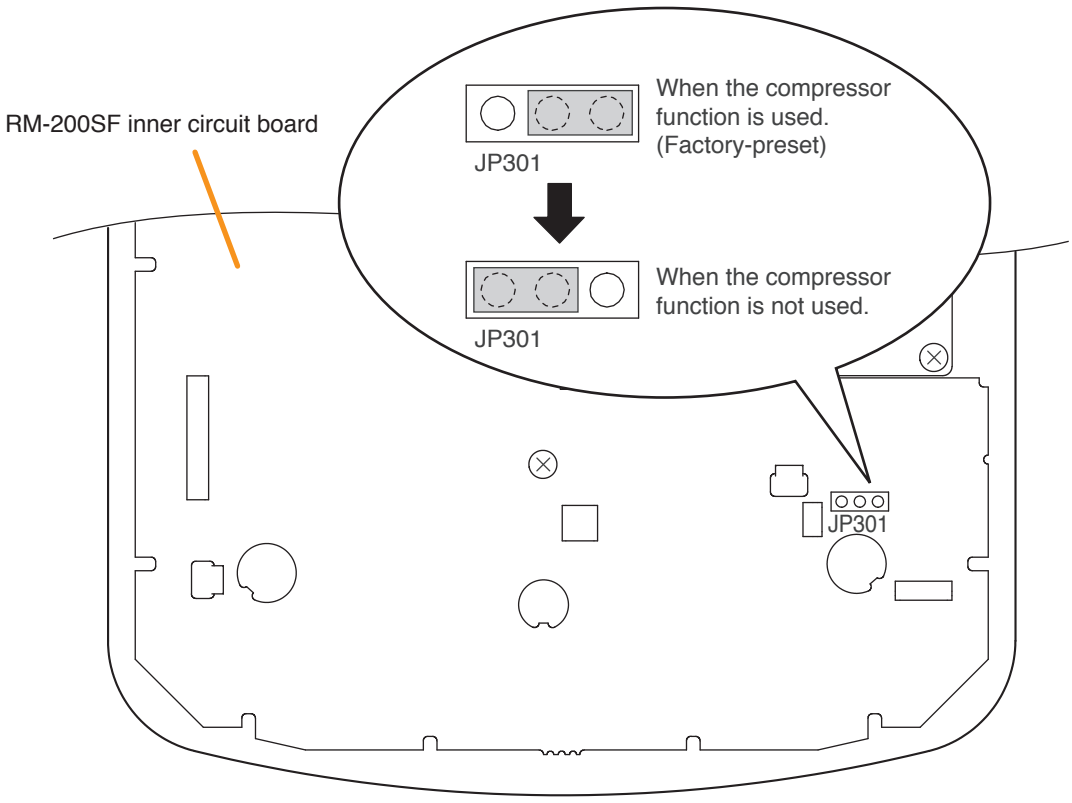
Notes
- Turn off the power before starting this work.
- To avoid damage from static electricity, never touch the parts on the circuit board.

[RM-200SF]

Step 1. Unscrew 5 screws in the figure at right, then detach the RM -200SF's rear plate.
Note
Note the specific shapes of the different screws.



Step 2. Set the jumper's position (JP301) on the circuit board attached to the front case as shown below.

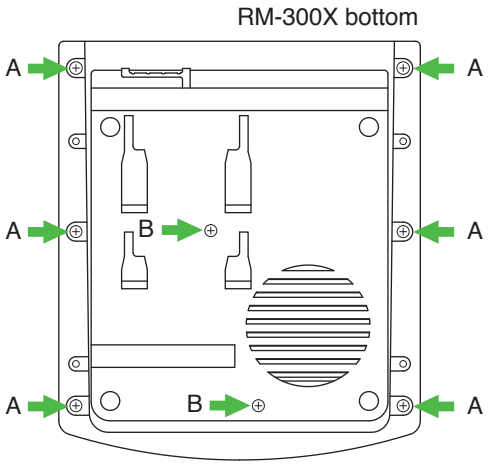


Step 3. Replace the RM-200SF's rear plate.
Note: Note the specific shapes of the different screws when replacing the rear plate. (See **Step 1**.)

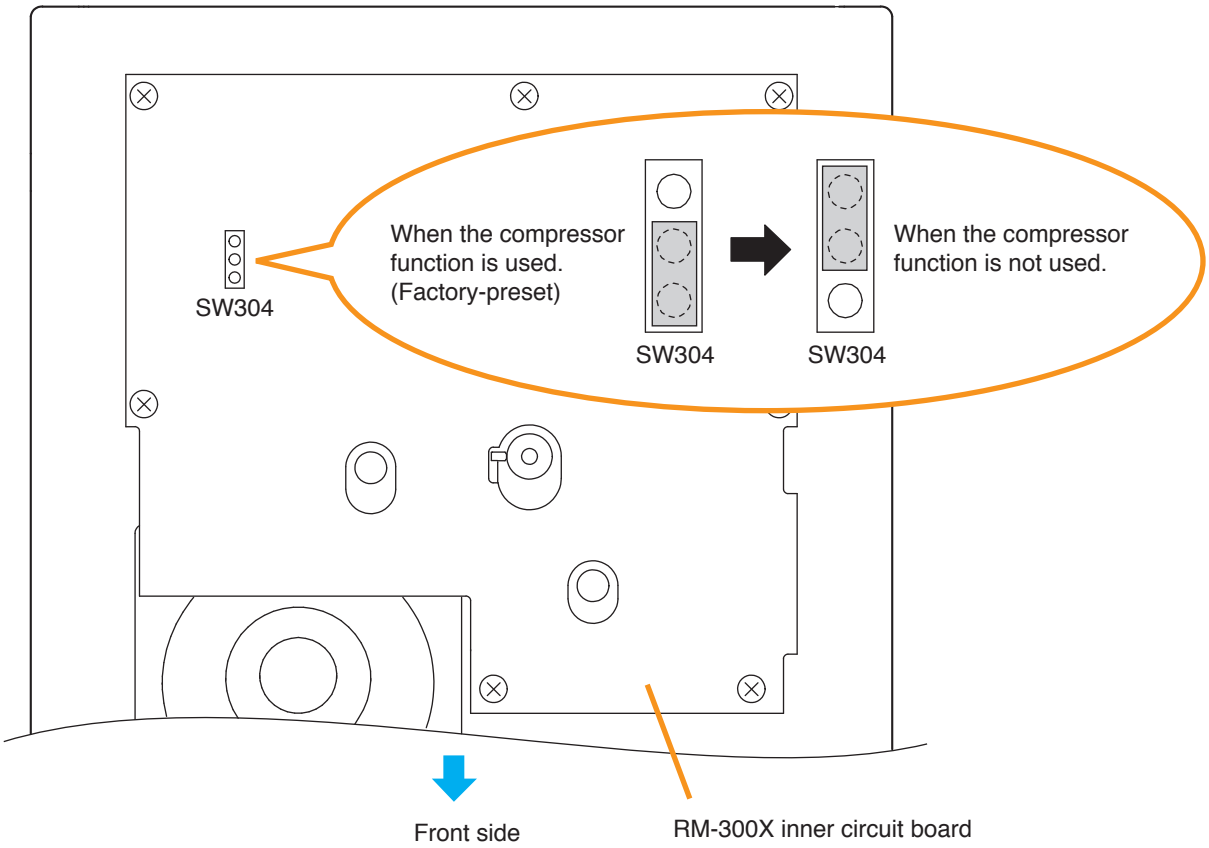
[RM-300X]

Step 1. Unscrew 8 screws indicated by arrows in the figure at right, then detach the RM-300X's upper case.

Note
Note the types of screws.
A: 3 x 8 tapping screw (white silver) ..... 6 pieces
B: 3 x 10 tapping screw (black) ..... 2 pieces



Step 2. Set the jumper's position (SW304) on the circuit board attached to the bottom plate as shown below.



Step 3. Replace the RM-300X's upper case.

Note: Note the types of screws when replacing the upper case (See **Step 1.**)

3.8. Microphone Fault Detection Function Setting (RM-300X Only)

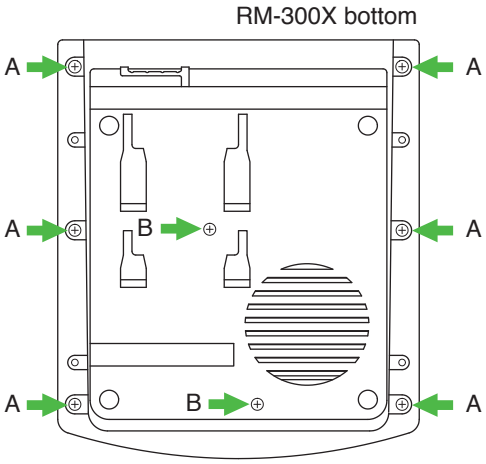
⚠ WARNING This work should only be performed by a qualified professional electrician. If users open the unit case or modify the unit, this may cause fire or electric shock.

The RM-300X is equipped with the microphone fault detection function, which can be set to OFF . (Factory-preset to ON)

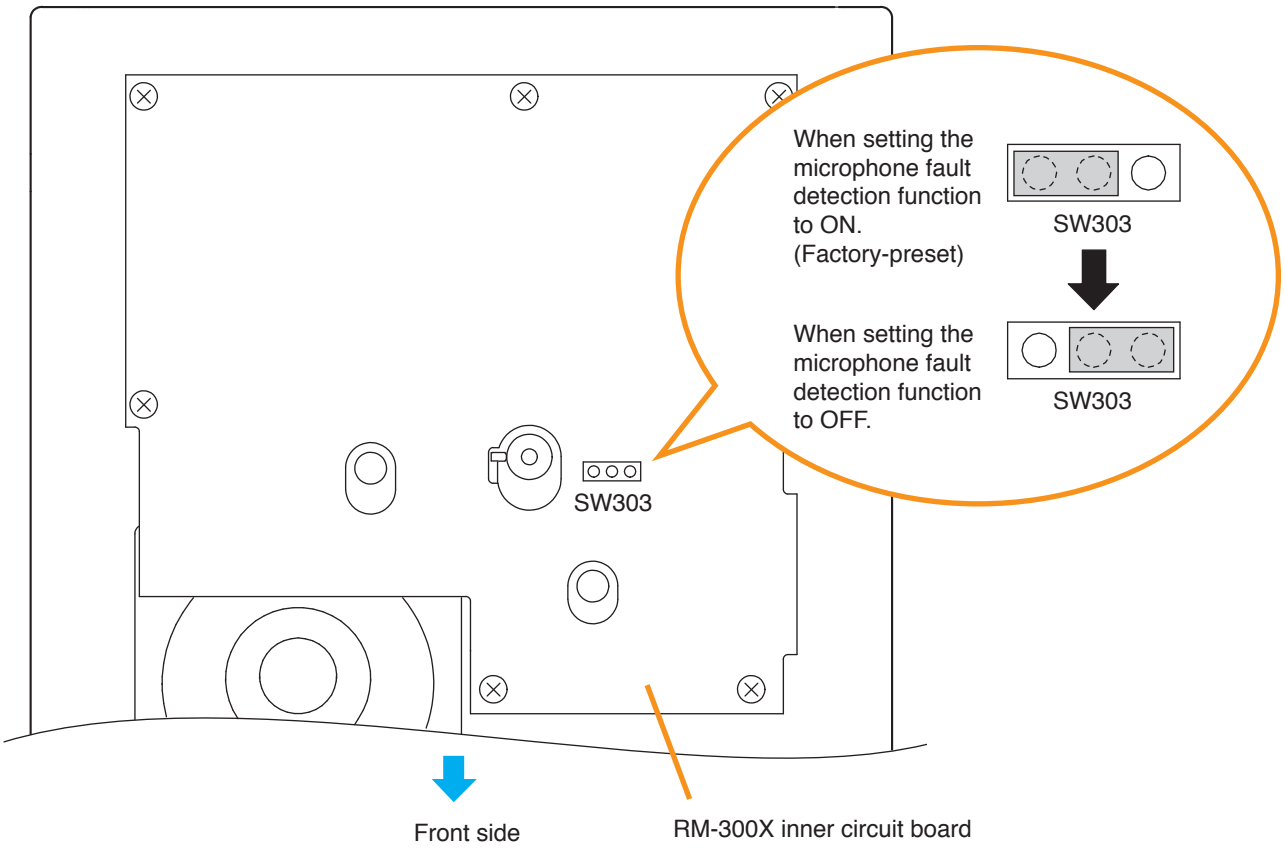
Notes
- Turn off the power before starting this work.
- To avoid damage from static electricity, never touch the parts on the circuit board.

Step 1. Unscrew 8 screws indicated by arrows in the figure at right, then detach the RM-300X's upper case.

Note
Note the types of screws.
A: 3 x 8 tapping screw (white silver) ..... 6 pieces
B: 3 x 10 tapping screw (black) ..... 2 pieces



Step 2. Set the jumper's position (SW303) on the circuit board attached to the bottom plate as shown below.



Step 3. Replace the RM-300X's upper case.
Note: Note the types of screws when replacing the upper case (See **Step 1.**)

3.9. Installing the RM-200SF on a Wall

The RM-200SF is designed for on-wall installation.

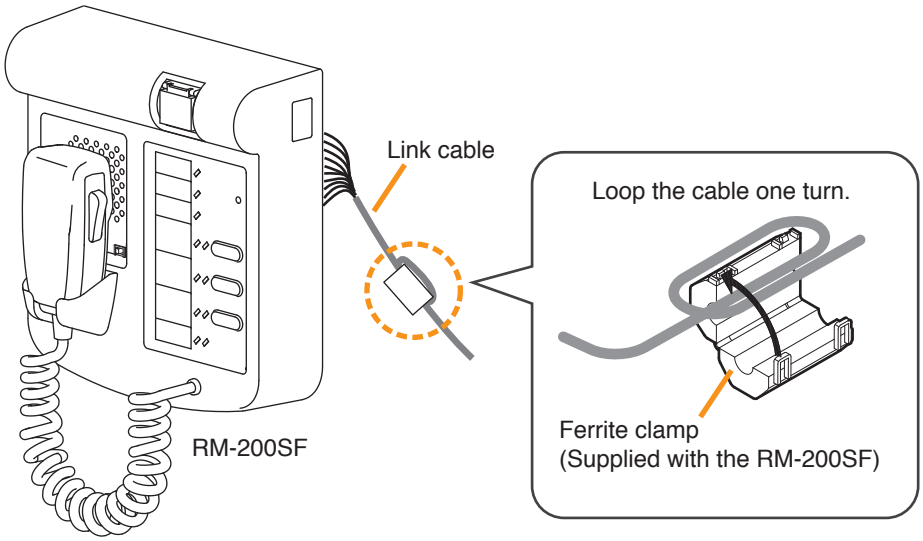
[Mounting hardware]

To mount the RM-200SF on the wall, the following parts are required.

Wall mount bracket unit ..... 1 (supplied with the RM-200SF)
Wall mounting screws
4 x 25 tapping screw for wooden wall ..... 2 (supplied with the RM-200SF)
M3.5 x 20 screw for electrical box ..... 2 (supplied with the RM-200SF)

[Ferrite cable clamp attachment]

The supplied ferrite clamp needs to be attached to the Link cable as illustrated below.
As its mounting timing differs depending on the installation way of the RM-200SF, mount the clamp in the appropriate installation step.



Mount the ferrite clamp (supplied with the RM-200SF) on the cable in a way that the cable is looped one turn as illustrated. (This countermeasure is for complying with the CE marking.)

[Installation]

Step 1. Install the wall mount bracket unit supplied with the RM-200SF on the wall.

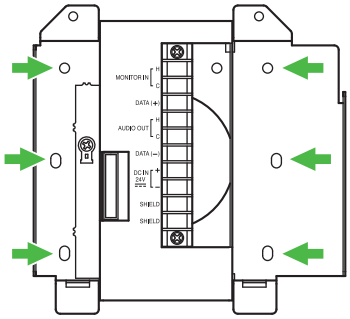
1-1. Installing directly on the wall

Install the unit on the wall using 2 screws or more depending on the installation location.
The RM-200SF comes with 2 tapping screws 4 x 25 for direct wall mounting.

> **⚠ WARNING**
>
> - Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
> - Be sure to install the bracket on the wall using 2 or more screws.

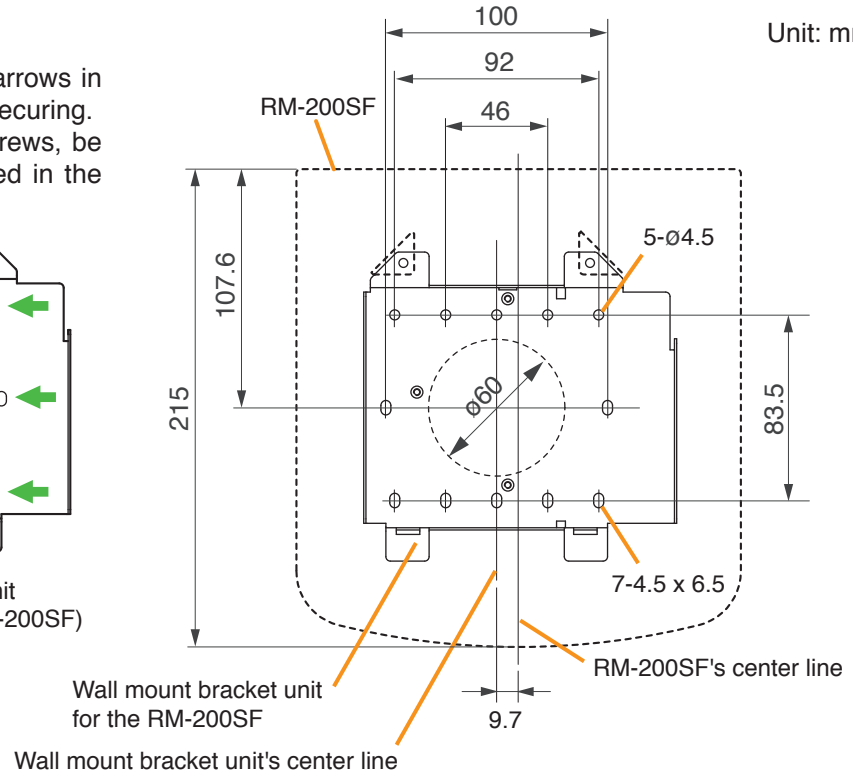
Notes

- Six mounting holes indicated by arrows in the figure below can be used for securing.
- When securing the unit with 2 screws, be sure to use a pair of holes located in the middle of the Bracket A.



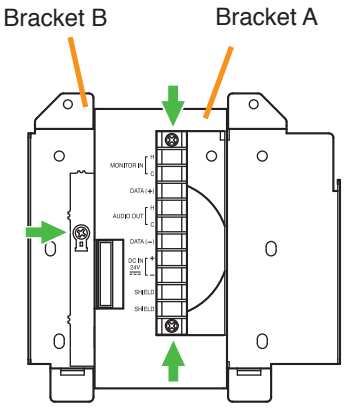
Wall mount bracket unit
(supplied with the RM-200SF)

Unit: mm



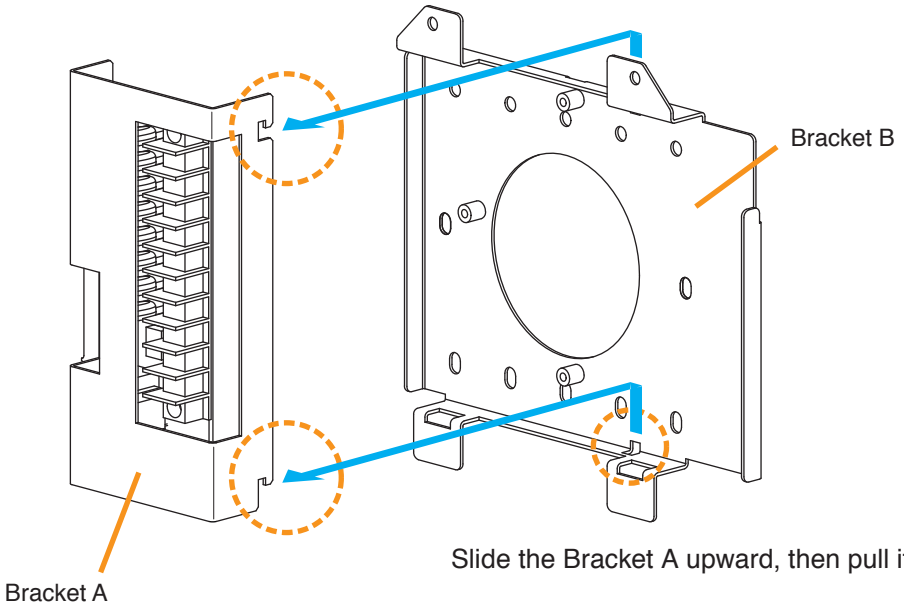
1-2. Installing to a 1-gang electrical box

(1) Unscrew 3 screws (indicated by arrows in the figure at right) that fix the Bracket A to the Bracket B of the wall mount bracket unit.



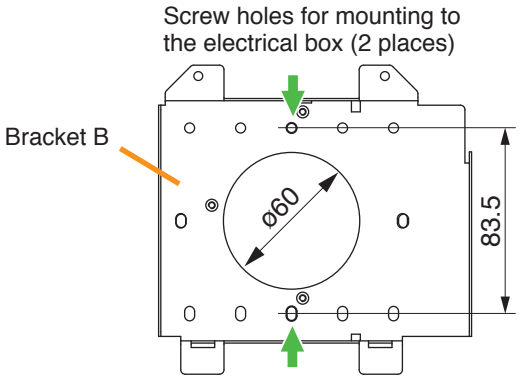
Wall mount bracket unit
(supplied with the RM-200SF)

(2) Slide the Bracket A as show below to detach it from the Bracket B.



Slide the Bracket A upward, then pull it toward you.

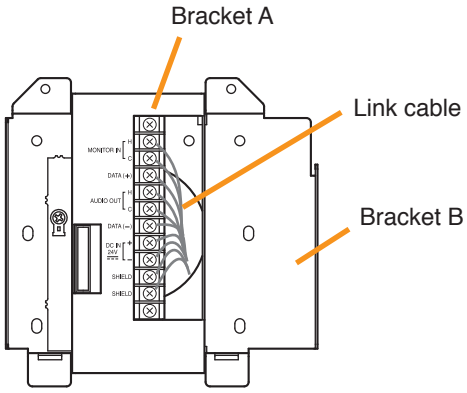
(3) Attach the Bracket B to the electrical box using 2 screws M3.5 x 20 supplied with the RM-200SF.



Unit: mm

(4) Replace the Bracket A.
Reverse the procedures (1) and (2) above.
Note
Take care not to pinch the routed link cable between the Brackets A and B.

Step 2. Connect the link cable to the screw terminal block.

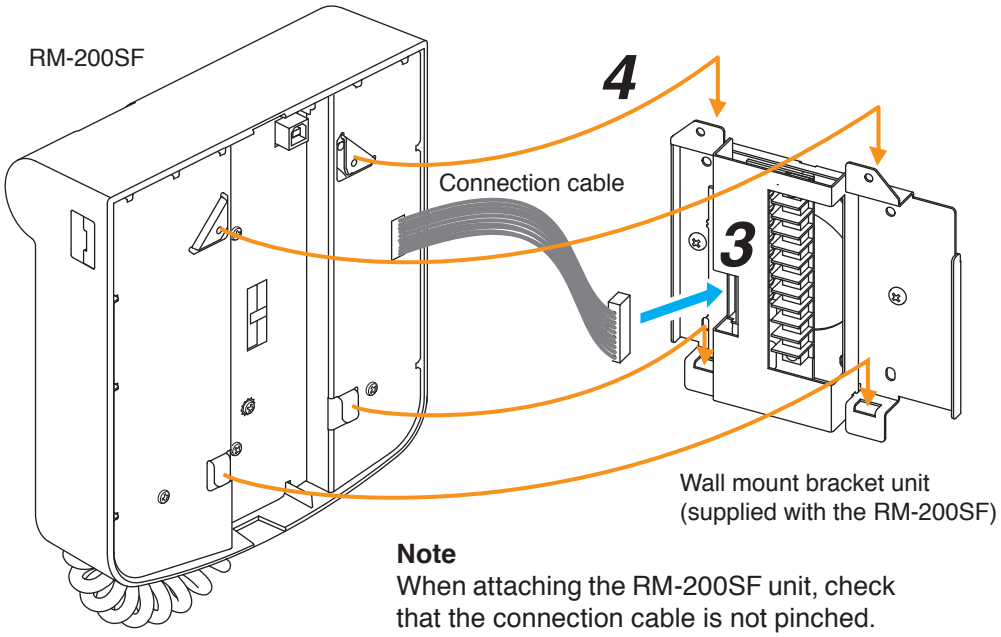


Wall mount bracket unit
(supplied with the RM-200SF)

Note
Put the link cable inside the Bracket A after connection completion.
Do not allow the link cable to protrude.
The cable may be damaged if it protrudes when the bracket unit is installed onto the wall.

Step 3. Plug the RM-200SF's extension connector into the connector port on the wall mount bracket unit.

Step 4. Attach the RM-200SF unit to the wall mount bracket unit.

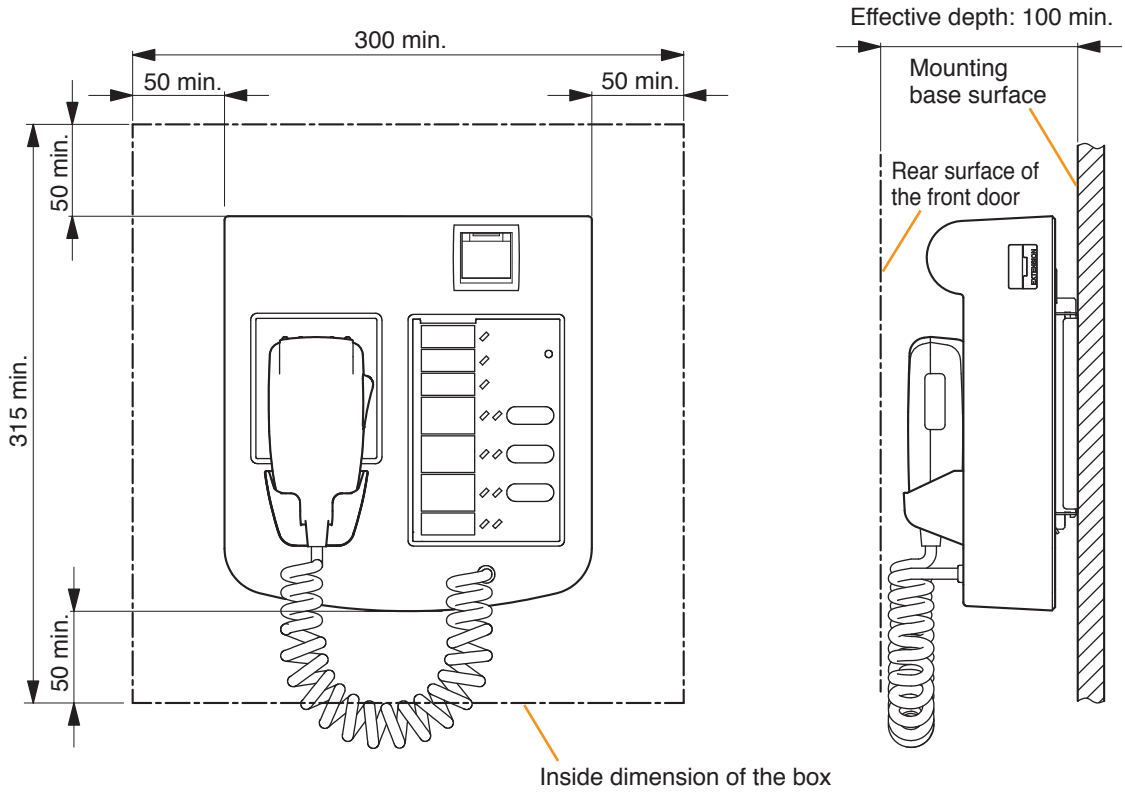


Note
When attaching the RM-200SF unit, check that the connection cable is not pinched.

[When the RM-200SF is installed in a wall box]

When the RM-200SF is installed in a wall box (prepare separately), the box should measure at least 300 mm wide x 315 mm high as illustrated below.

Unit: mm



3.10. Installing the RM-320F on a Wall (RM-200SF only)

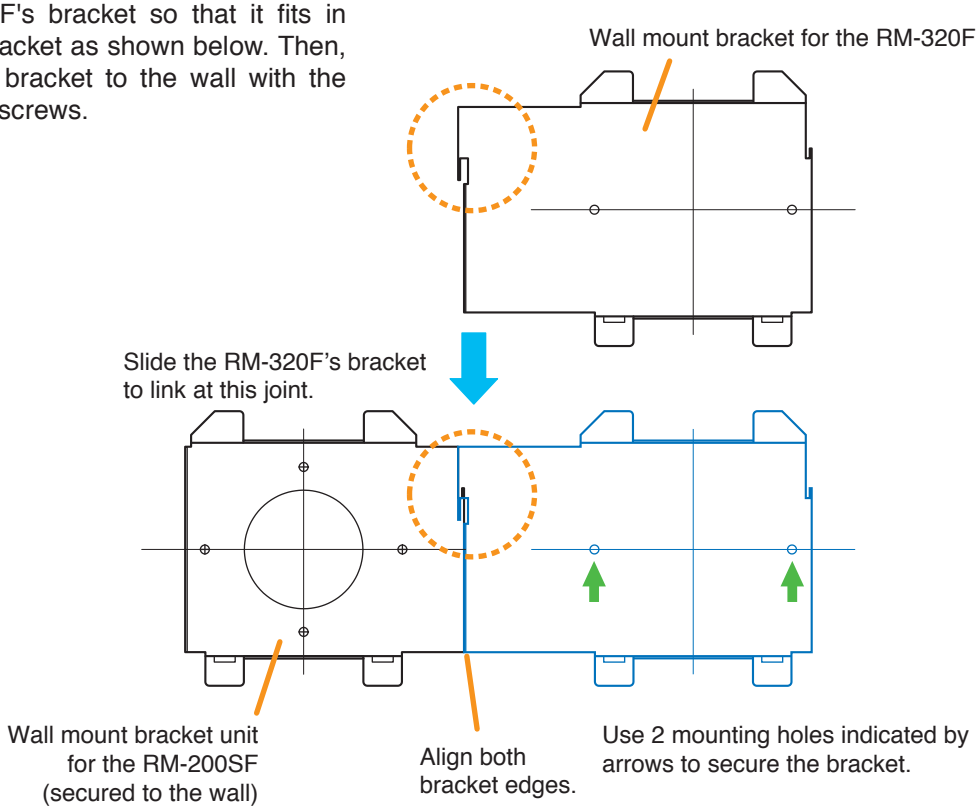
The RM-320F is designed for on-wall installation.
When adding an RM-320F Remote Microphone Extension to expand the RM-200SF, use the RM-320F's Extension cable and included Linkage Bracket to link the 2 microphones.
Up to 4 RM-320Fs can be connected to an RM-200SF.

[Mounting hardware]

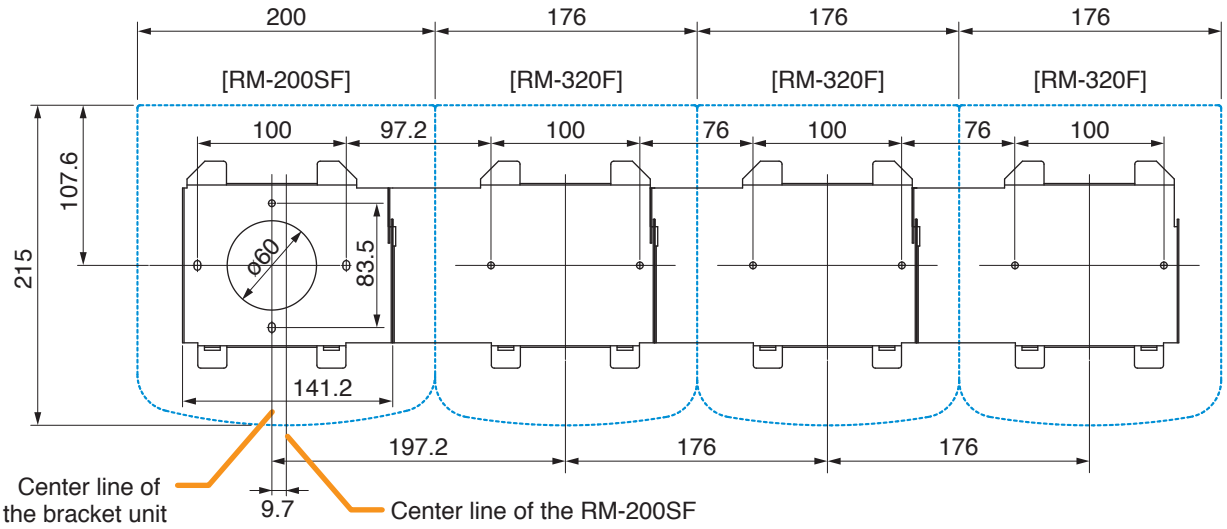
To mount the RM-320F on the wall, the following parts are required.
- Wall mount bracket unit ..... 1 (supplied with the RM-320F)
- Wall mounting screws
  - 4 x 25 tapping screw for wooden wall ..... 2 (supplied with the RM-320F)

Step 1. Install the wall mount bracket unit supplied with the RM-200SF on the wall. (See p. 3-27 and p. 3-28, **Steps 1** and **2**.)

Step 2. Place the RM-320F's bracket so that it fits in the RM-200SF's bracket as shown below. Then, fix the RM-320F's bracket to the wall with the supplied 2 tapping screws.



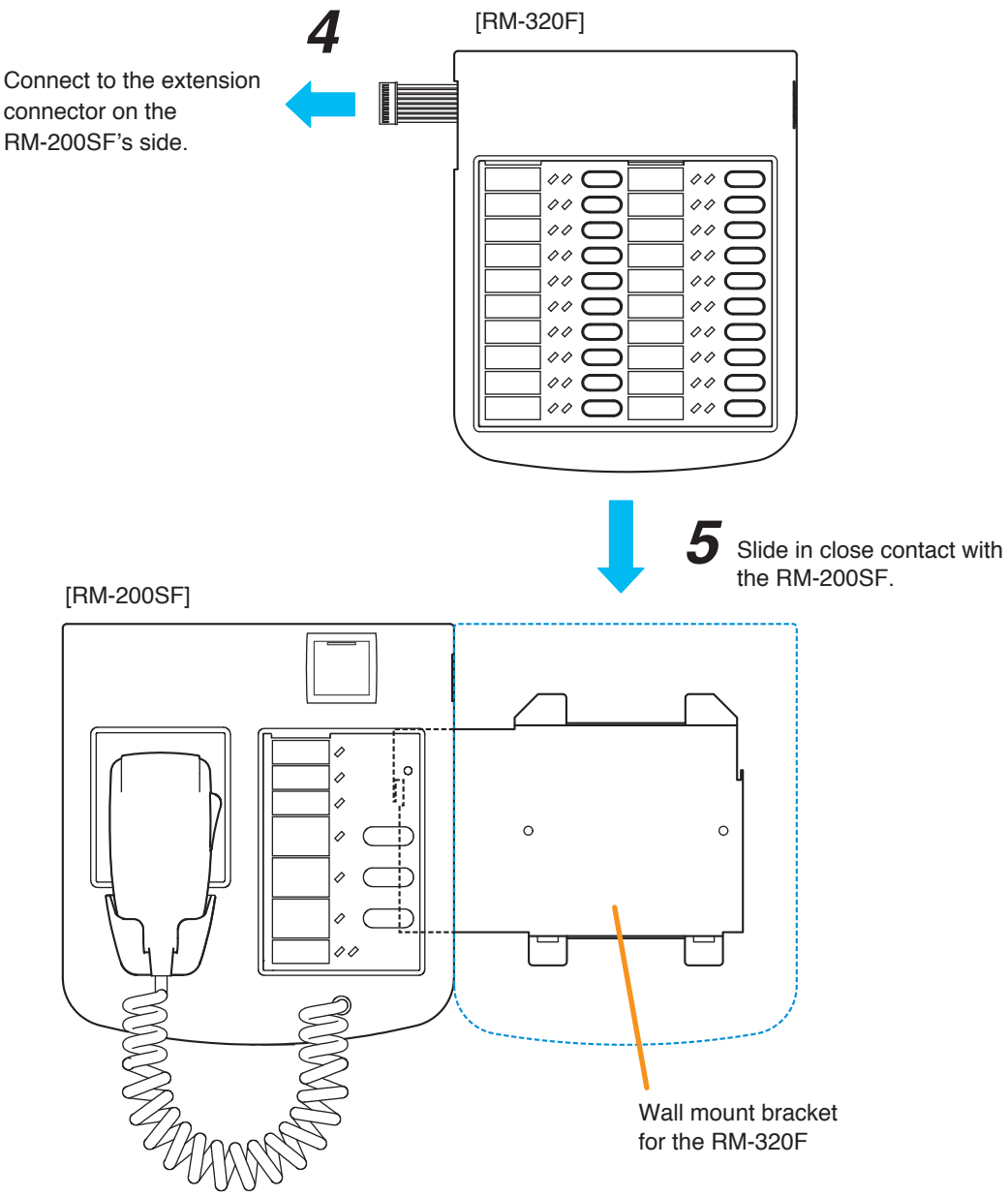
[Positional dimensions of the RM-200SF and RM-320F]



Step 3. Attach the RM-200SF to its wall mount bracket unit. (See p. 3-29, **Steps 3** and **4.**)

Step 4. Connect the RM-320F's cable to the extension connector on the RM-200SF's side.

Step 5. Install the RM-320F to its wall mount bracket sliding it in close contact with the RM-200SF as shown below.



3.11. RM-300X Extension with the Addition of the RM-210F (Installed on a Flat Surface)

When adding an RM-210F Remote Microphone Extension to expand the RM-300X, use the RM-210F's Extension cable and included Linkage Bracket to link the 2 microphones.
Up to 7 RM-210Fs can be conncted to an RM-300X.
After DIP switch setting completion, follow the procedures below.

[Mounting hardware (supplied with the RM-210F)]

Linkage Bracket A 2
Linkage Bracket B 1
Screw 12

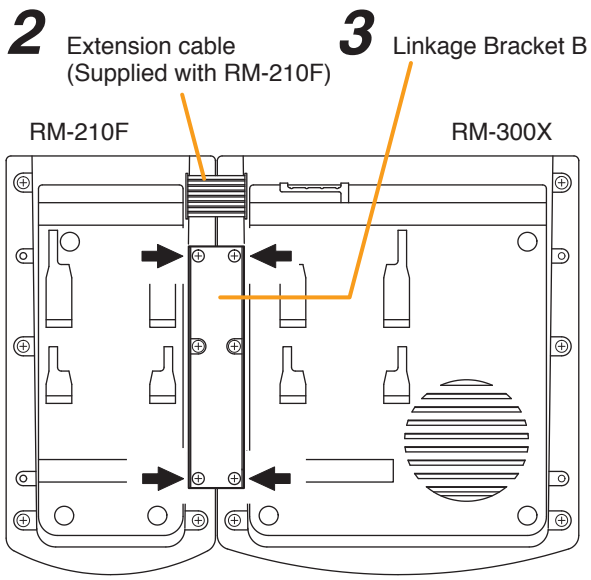
Step 1. Turn over both the RM-300X and the RM-210F, and keep them in close contact with each other.

Step 2. Connect between both units using the extension cable supplied with the RM-210F.

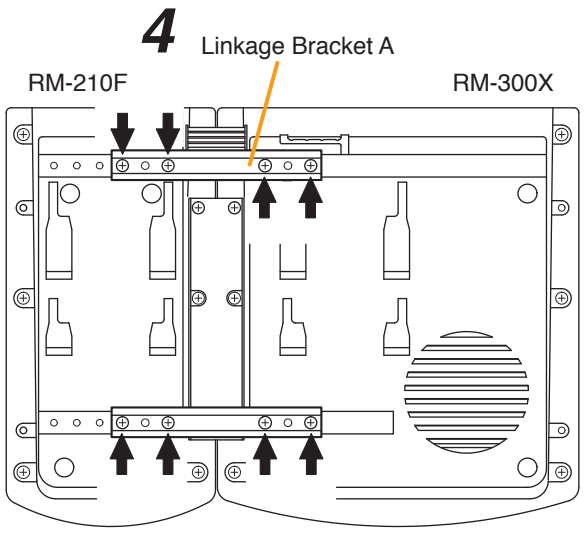
Step 3. Using 4 supplied screws indicated by arrows and Linkage Bracket B, link both units together.

Step 4. Using 8 supplied screws indicated by arrows and 2 pieces of Linkage Bracket A, fix both units securely.

Note: To add another RM-210F to the installed RM-210F, use the similar procedures as in this section.



[Bottom side]



[Bottom side]

Notes

- Because the Linkage Bracket A is provided with 2 spare screw holes, use them to link the 2 units if the designated screw threaded holes are damaged.
- If incorrect or loose connection is found between both units, loosen all the bracket fixing screws to disassemble the units and then link them again with the screws.

3.12. Installing the RM-300X on a Wall

[Mounting hardware]

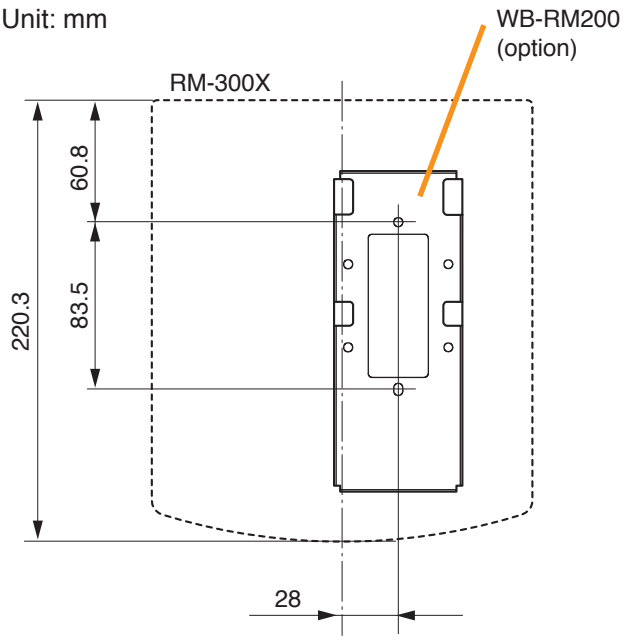
To mount the RM-300X on the wall, the following parts are required.

Wall mounting bracket for the RM-300X (model WB-RM200) .... 1 (option)
M3.5 x 20 screw for electrical box ..... 2 (supplied with the WB-RM200)
4 x 25 tapping screw for wooden wall ..... 2 (supplied with the WB-RM200)

Step 1. Attach the WB-RM200 Wall-Mounting Bracket on the wall.
In this case, leave the LINK cable out of the notch in the bracket.
Note
Since there are 2 types of mounting screws for an electrical box and for wall. Select ones according to the mounting method.

[WB-RM200 mounting dimensions]

Unit: mm

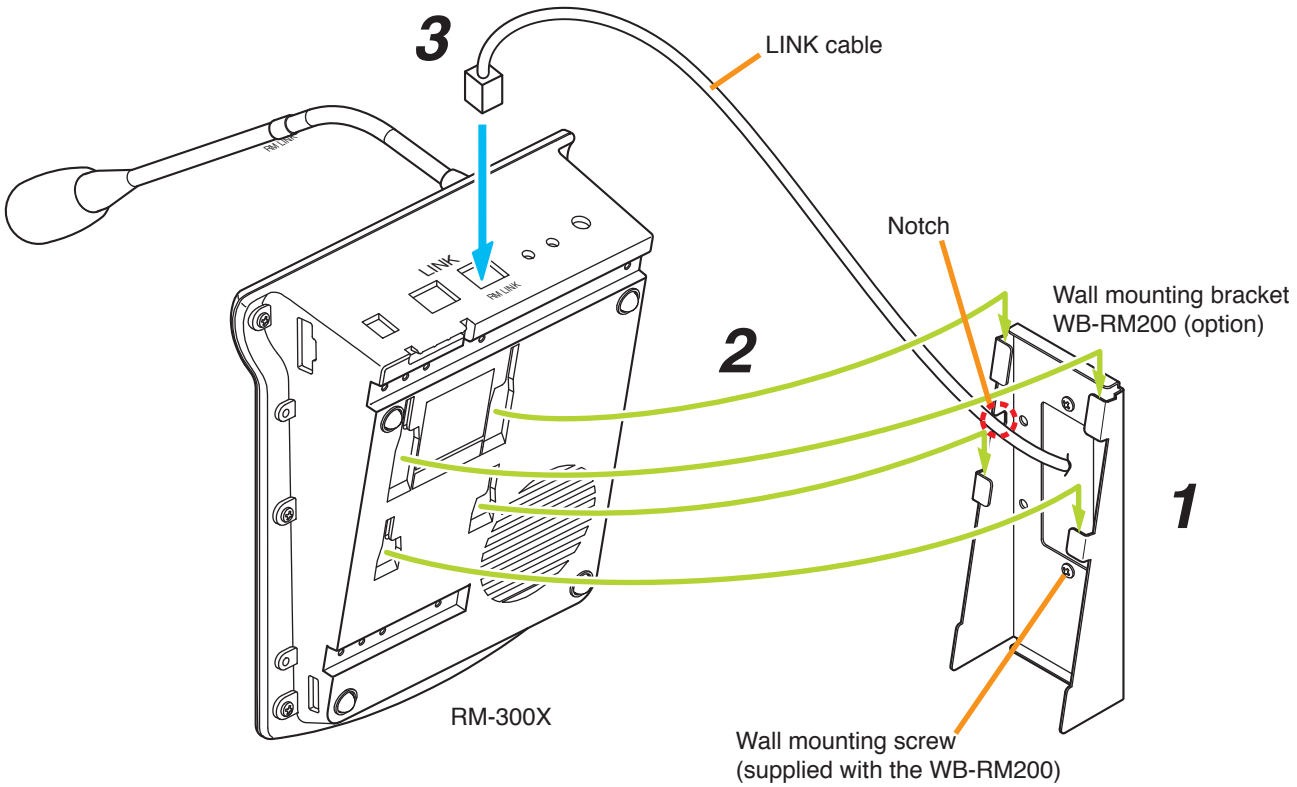


⚠ WARNING

- Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
- Be sure to use 2 screws when mounting the bracket to the wall.

Step 2. Hook the bottom surface of the RM-300X onto the WB-RM200.

Step 3. Plug the LINK cable into the RM-300X's RM link connector.



3.13. Installing the RM-210F on a Wall (RM-300X Only)

[Mounting hardware]

To mount the RM-210F on the wall, the following parts are required.

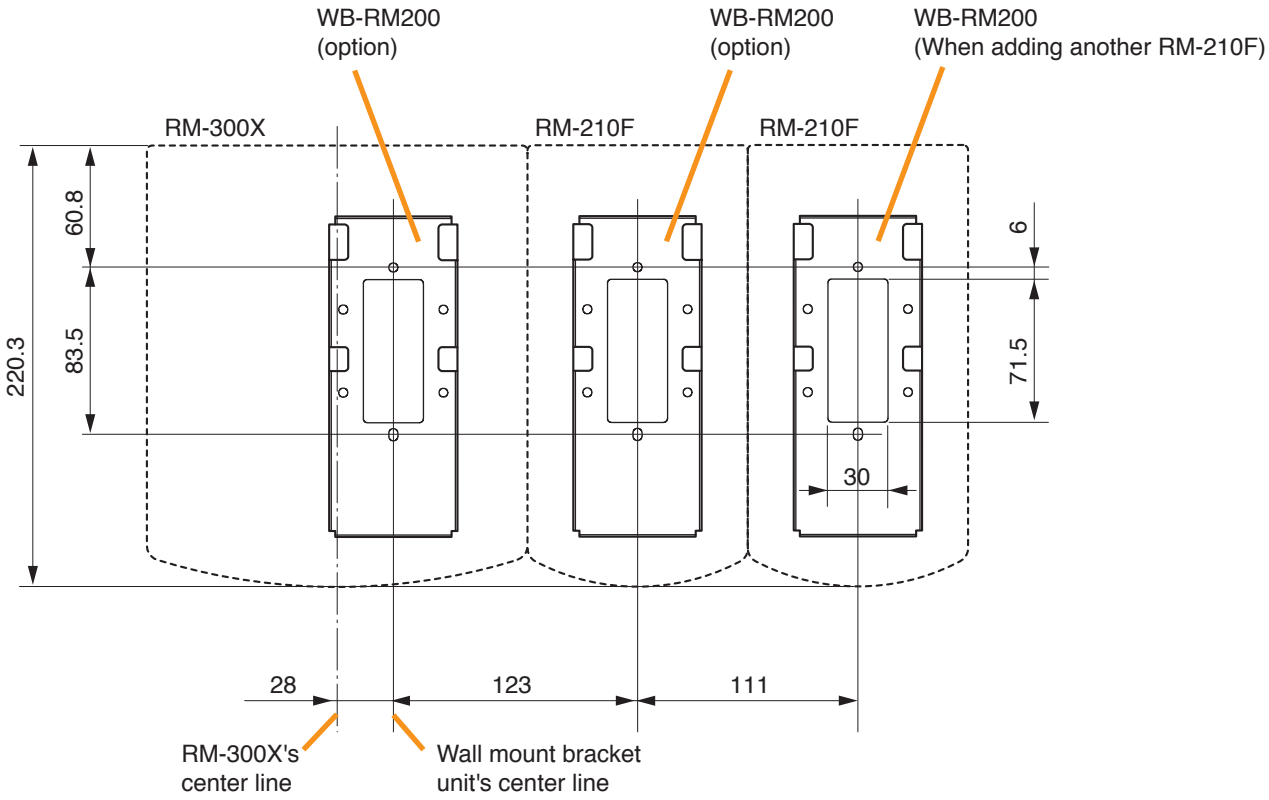
Wall mounting bracket for the RM-210F (model WB-RM 200) .... 1 (option)
M3.5 x 20 screw for electrical box ..... 2 (supplied with the WB-RM200)
4 x 25 tapping screw for wooden wall ..... 2 (supplied with the WB-RM200)

Step 1. Mount the RM-300X on the wall. (See p. 3-33.)

Step 2. Attach the WB-RM200 Wall-Mounting Bracket for mounting the RM-210F on the wall.

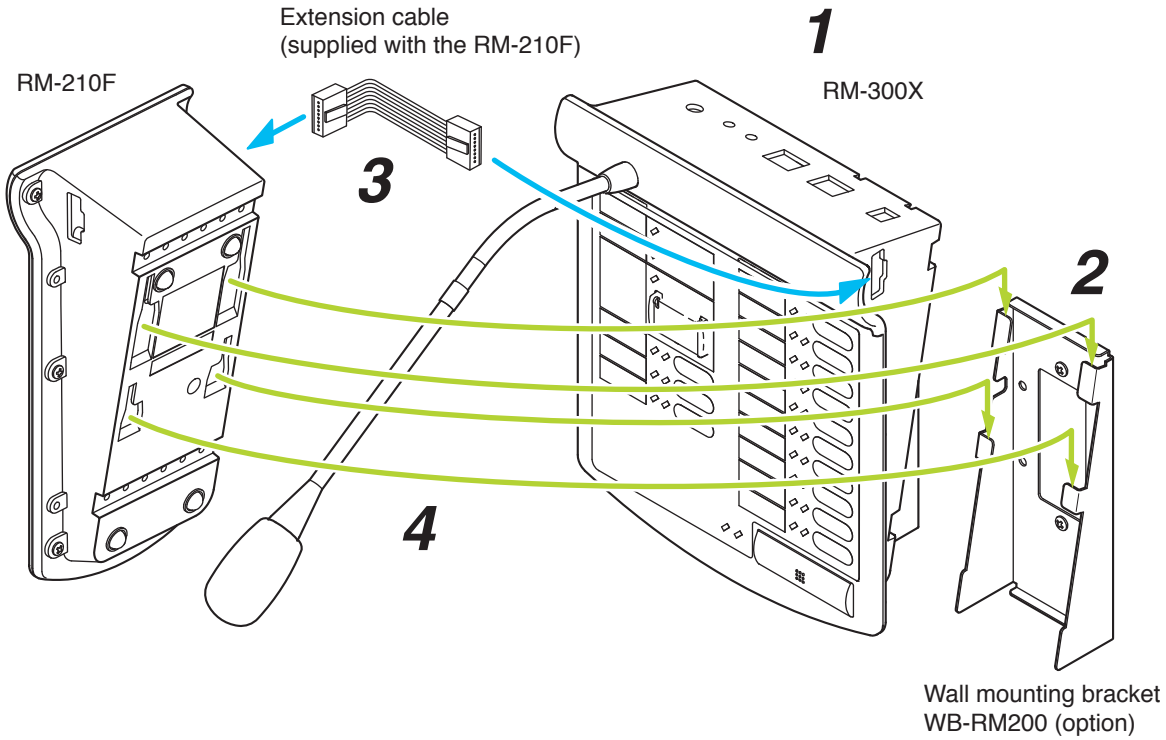
[WB-RM200 mounting dimensions]

Unit: mm



Step 3. Using the extension cable supplied with the RM-210F, connect the RM-300X's side EXTENSION connector to the RM-210F's side EXTENSION connector.

Step 4. Hook the bottom surface of the RM-210F onto the WB-RM200.



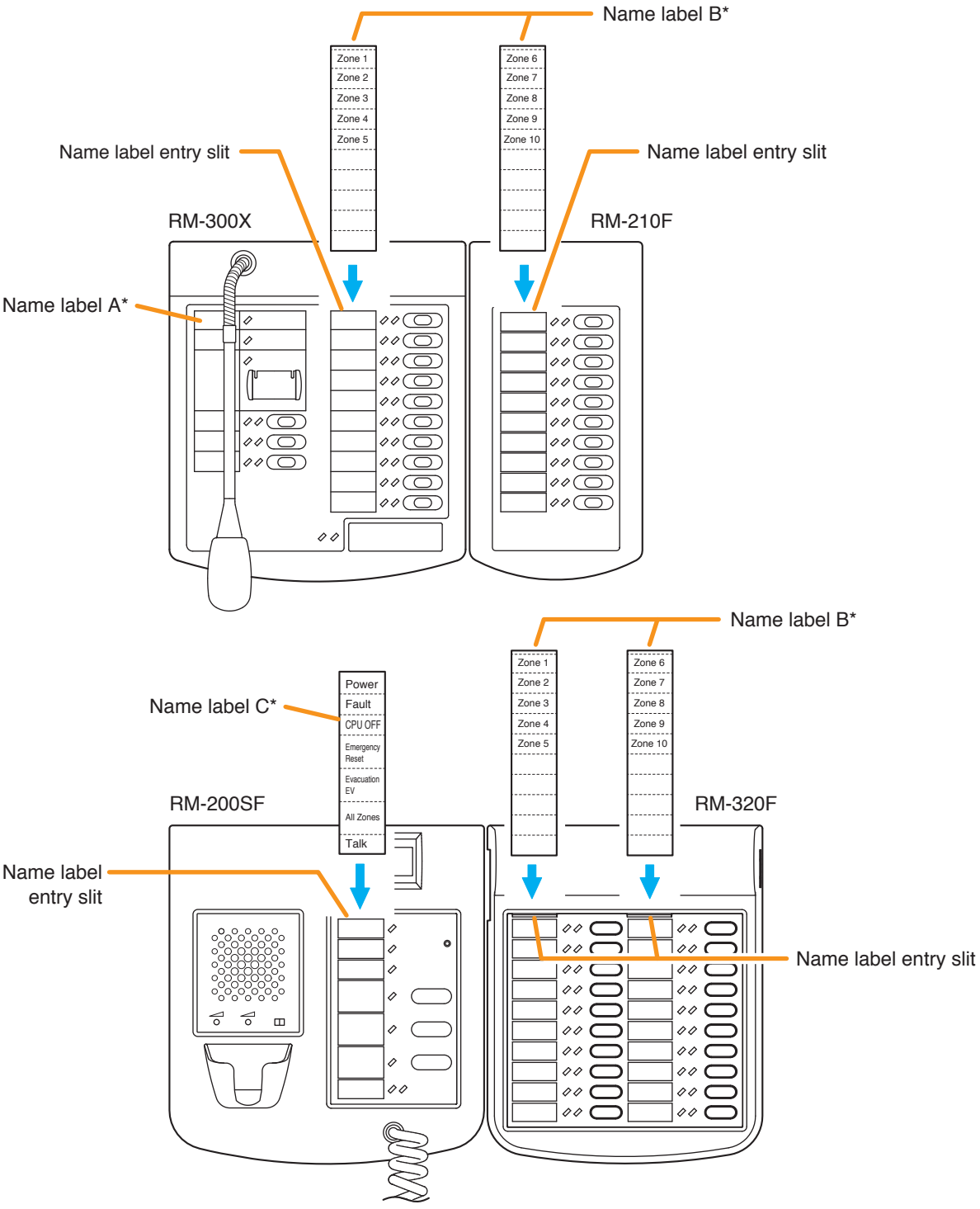
3.14. Creating Remote Microphone Name Labels

Using the VX-3000 Setting Software function, assigned names of preset RM-200SF, RM-320F, RM-300X, and RM-210F Function keys can be printed out. Once printed, cut out the printed names with scissors to use them as corresponding name labels. The paper used for the name label must be under 0.2 mm in thickness.

Note
For creating and printing name labels using the VX-3000 Setting Software, see the separate Setting Software Instructions, "PRINTING LABELS FOR REMOTE MICROPHONES."

3.14.1. Inserting the name label

- Fully insert the name label cut to the instructed size into the label entry slit.
- To remove the label, pull it out of the slit using the tip of knife blade.



* Created and printed using the VX-3000 Setting Software.

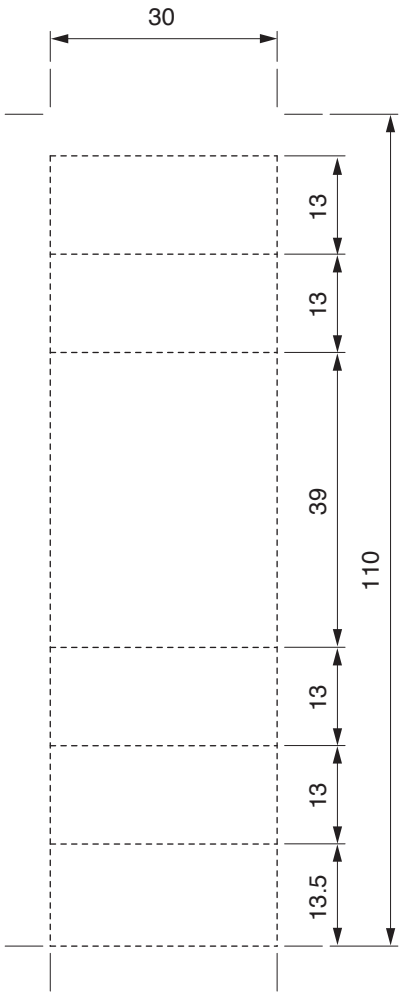
3.14.2. If the name label is not printed correctly

The name label created using the VX-3000 Setting Software may not be printed in correct size depending on the configuration environment of your PC. In such cases, try one of the methods described below.

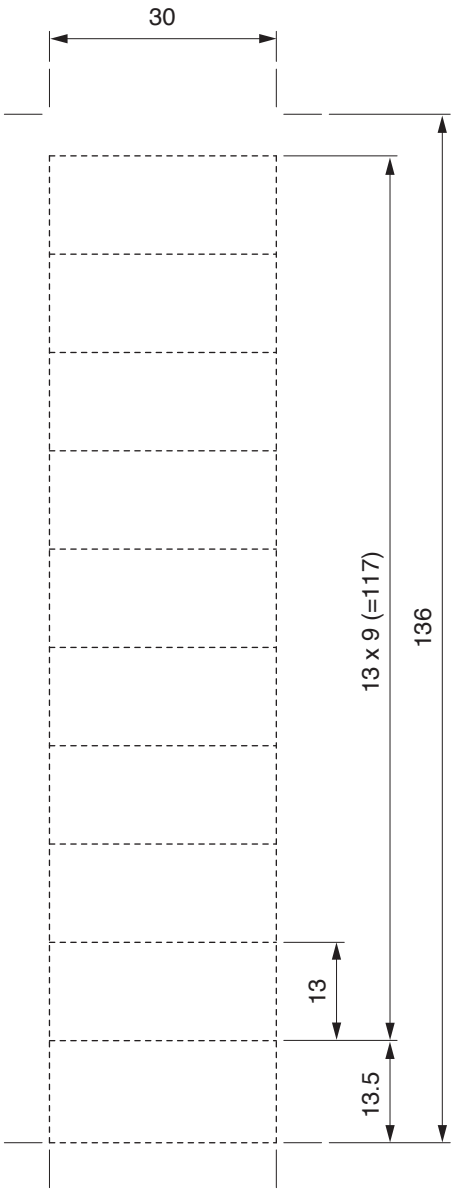
(1) Preparation by hand
Copy the "Pattern paper for hand writing" on the next page. After writing a name, cut out the pattern paper aligning it with the cutting guidelines.
(2) Preparation by using a PC or word processor
Prepare and print according to the instructions given in the "Dimensional diagram for printing devices." Then cut out to the instructed size.

3.14.3. Dimensional diagram for printing devices

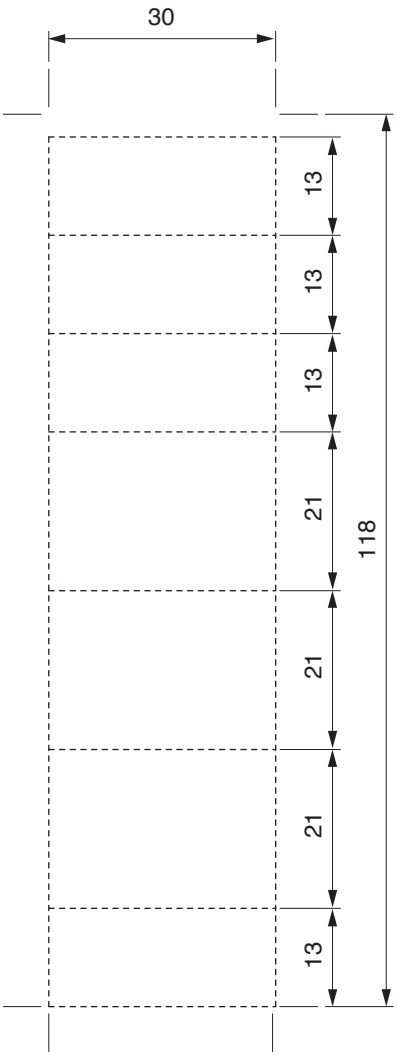
Name label A
Cutting size: 30 x 110 mm



Name label B
Cutting size: 30 x 136 mm

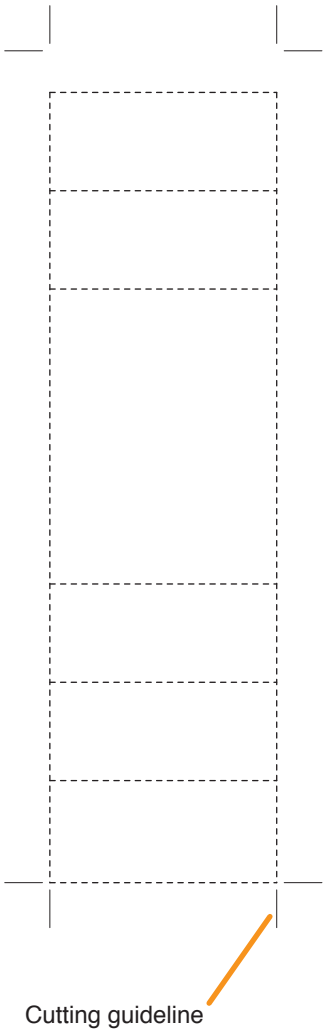


Name label C
Cutting size: 30 x 118 mm

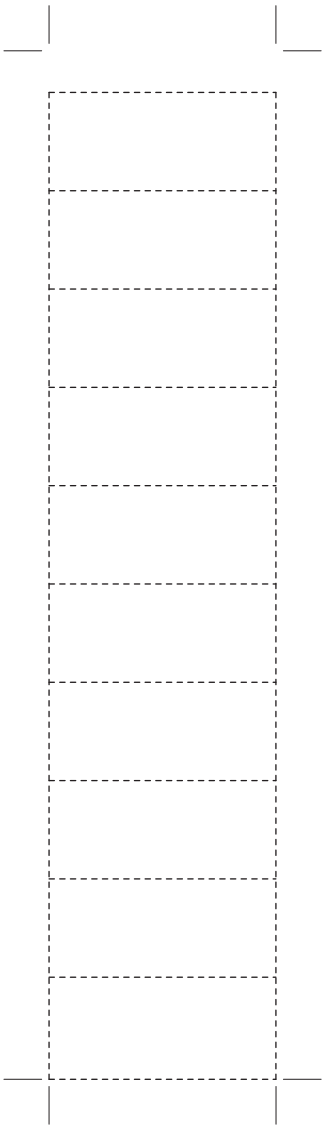


3.14.4. Pattern paper for hand writing

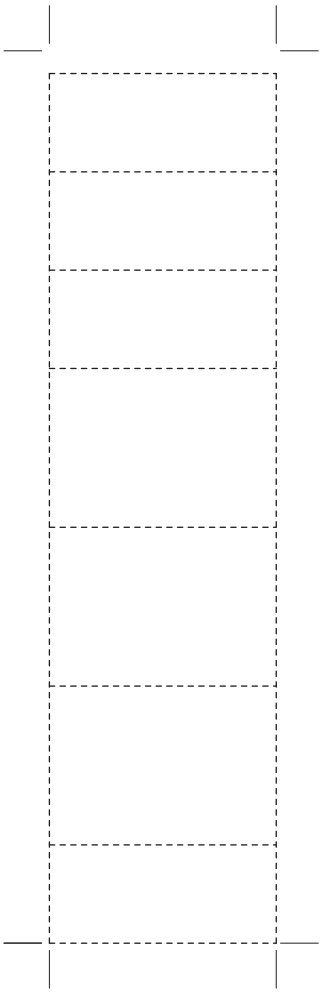
Name label A



Name label B



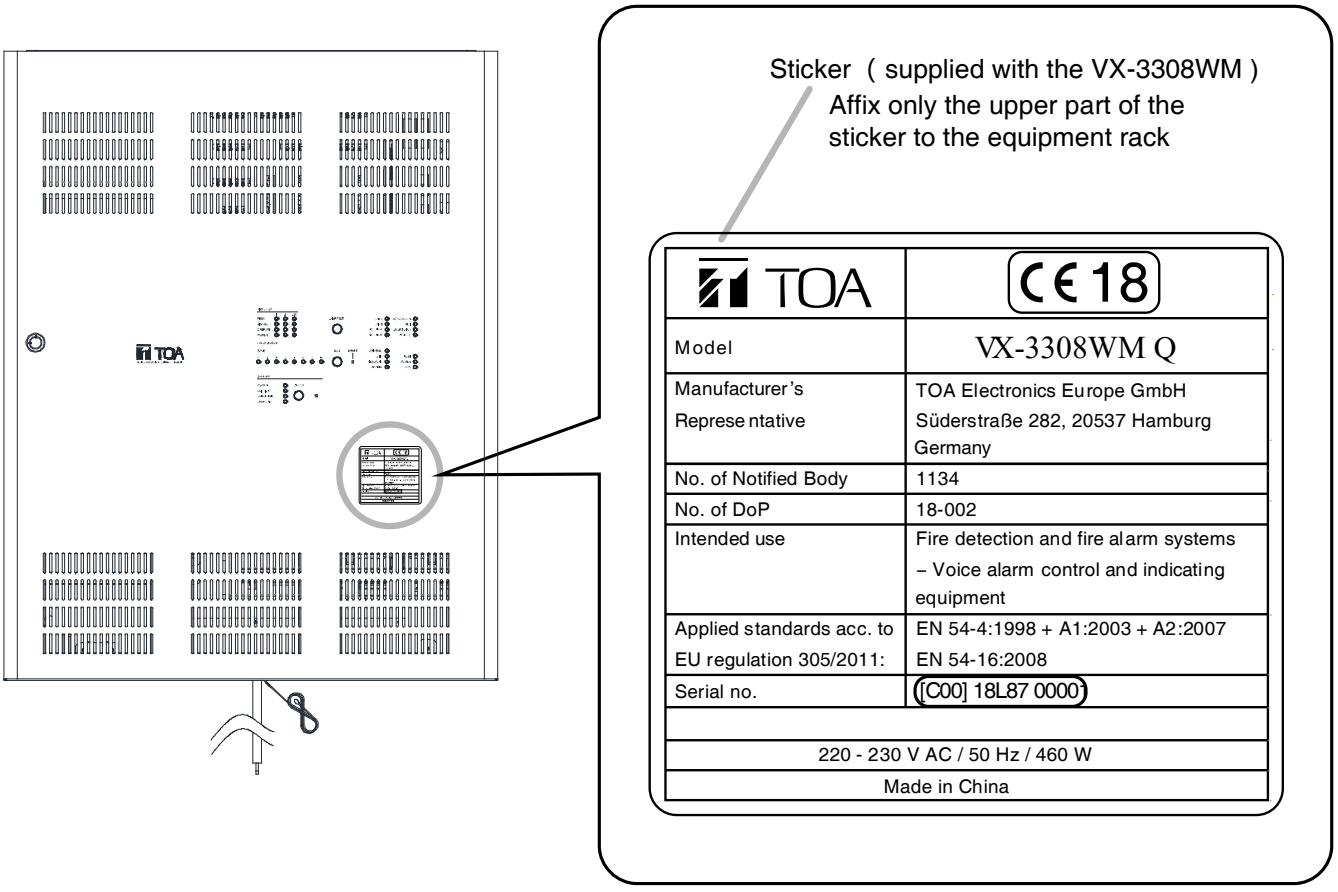
Name label C



Shown in actual size

3.15. Affixing Declaration of Compliance (EN54-4 and EN54-16 Standard)

To declare that the VX-3308WM complies with EN 54-4 and EN 54-16, affix the sticker supplied with the VX-3308WM visibly onto the VX-3308WM (front panel, or side if easier to see; e.g. at the lower right side as shown below).



4. CONNECTIONS

4.1. Removable Terminal Plug Connection

Notes

- Do not use a micro screwdriver. Sufficient torque is not given to the screws when tightening them, and connections may not be secured.
- Avoid soldering stranded or shielded cable, as contact resistance may increase when the cable is tightened and the solder is crushed, possibly resulting in an excessive rise in joint temperatures.
- When connecting 2 cables or a shielded cable to a single terminal, use a ferrule terminal with an insulation sleeve to crimp the cables because such cable conductors could become loose.

Recommended ferrule terminals for signal cables
(made by DINKLE ENTERPRISE)

Unit: mm

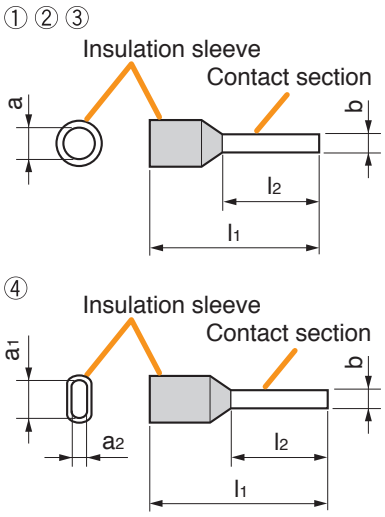
	Model Number	a	b	l_1	l_2
①	DN00308D	1.9	0.8	12	8
②	DN00508D	2.6	1	14	8

Recommended ferrule terminals for power supply cables
(made by DINKLE ENTERPRISE)

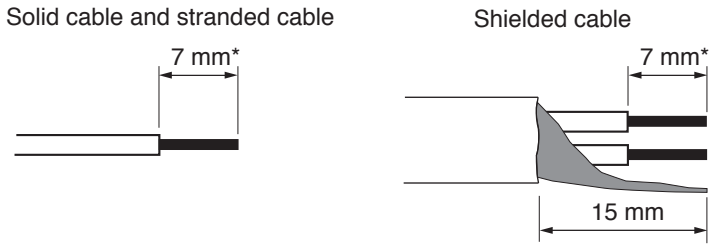
Unit: mm

	Model Number	a	a_1	a_2	b	l_1	l_2
③	DN01508D	3.5	—	—	1.7	14	8
④	DN01508B	—	6.6	3.6	2.3	16	8

Crimping tool: DNT01-2206B (made by DINKLE ENTERPRISE)



[Cable sheath to trim]



* Expose 8 mm or more when using the above ferrule terminal, and cut off an extra conductor protruding from the sleeve.

[Wiring procedures]

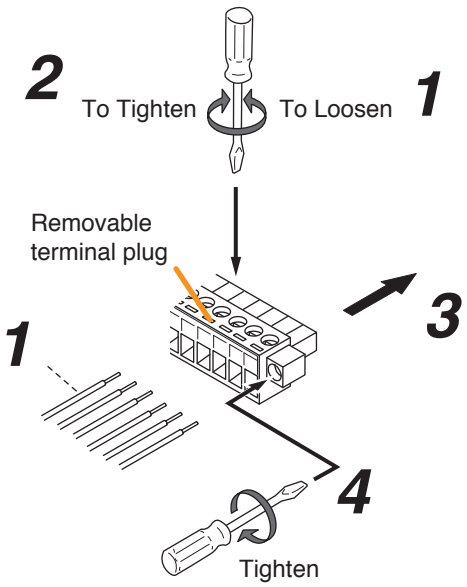
Procedures below are for the removable terminal plug with fixing screws.

Step 1. Loosen the terminal screw and insert the cable lead.

Step 2. Tighten the screw.
Pull on the cable lead to ensure it is securely connected.
If the lead pulls out, loosen the screw and follow the above procedures again.

Step 3. Insert the terminal plug into the corresponding terminal block in the unit's rear panel.

Step 4. Tighten the fixing screws.

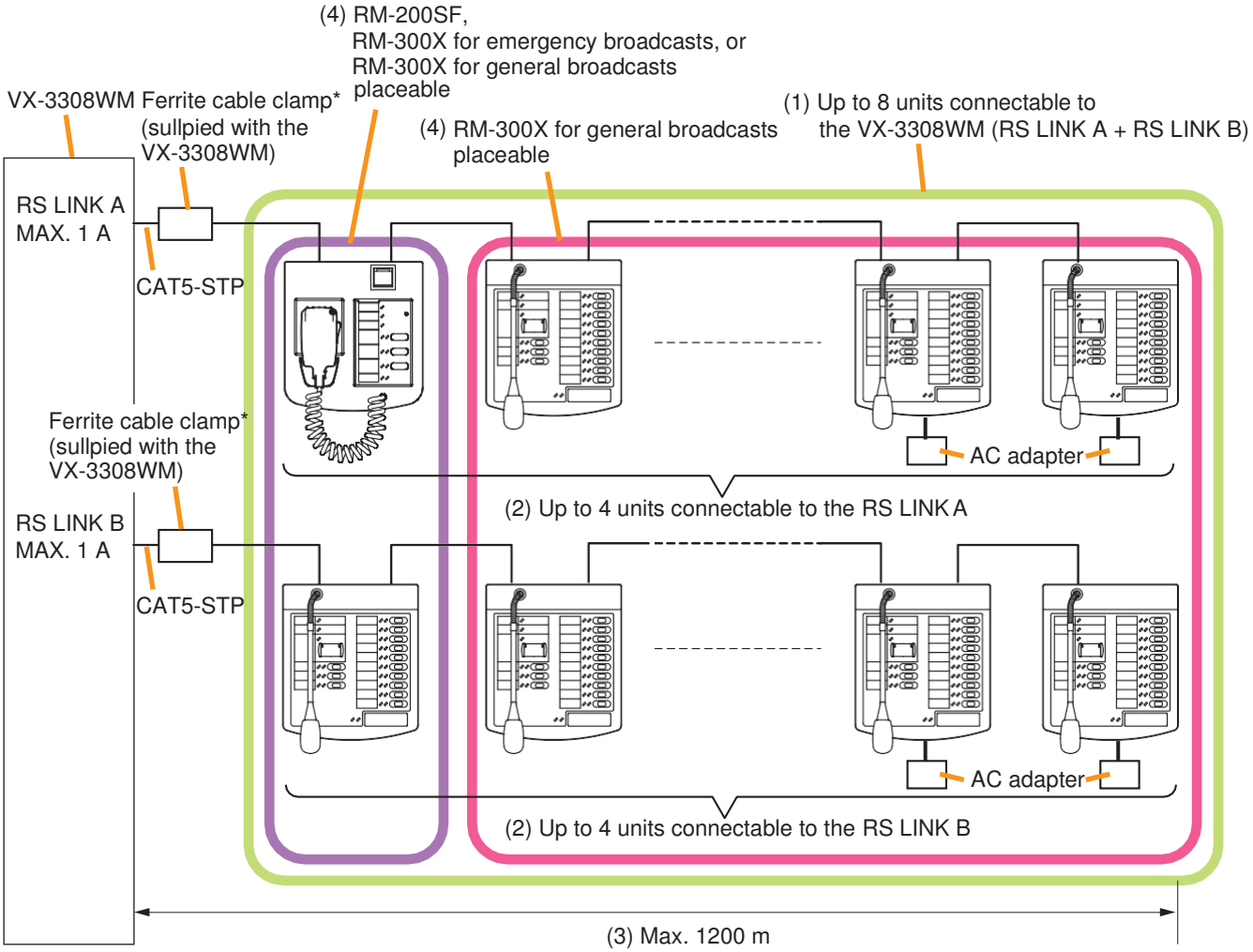


Note
Do not reverse **Steps 1 – 2** and **3 – 4** above. Force is applied to the connected receptacle pins while tightening the terminal screw and they may be damaged, resulting in bad connector contact.

4.2. Input Equipment Connections

4.2.1. Connecting the Remote microphone

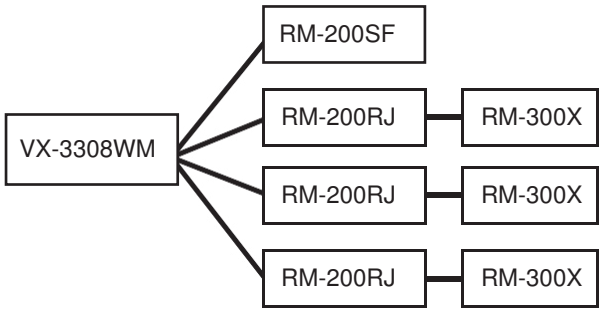
- The VX-3308WM is equipped with 2 channels of RS LINKs. Connect the remote microphone to one of these ports.
  The number of connectable units is limited as follows.
  (1) Up to 8 RM-200SF or RM-300X units can be connected to a single VX-3308WM.
  (2) Up to 4 RM-200SF or RM-300X units can be connected to a RS LINK.
  However, the VX-3308WM can supply power to up to 2 units. An AC adapter is required for the RM-200SF or RM-300X to be connected exceeding 2 units.
  (3) The maximum cable length from each RS LINK is 1200 m.
  (4) If the system is required to comply with EN54-4 and EN54-16, observe the following restrictions.
  - Out of 8 connectable remote microphones, the number of the connectable RM-200SF units or RM-300X units for emergency broadcasts is up to 2 in total, and 1 to a single channel of RS LINK.
  - When connecting the RM-200SF or the RM-300X for emergency use directly to each VX-3308WM 's RS LINK, make its distance Shortest compared to other remote microphones.



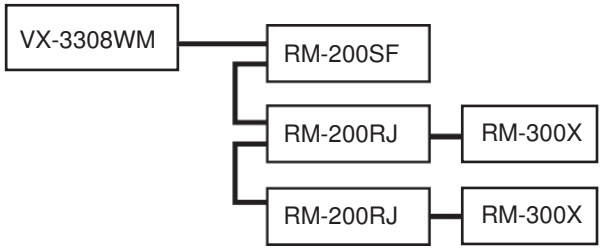
* ferrite cable clamp Attachment

- When connecting 2 or more remote microphones to a RS LINK, make branch wiring using the RM-200RJ Terminal unit or the Wall mount bracket unit supplied with the RM-200SF.

(When connecting 2 or more remote microphones: Example 1)

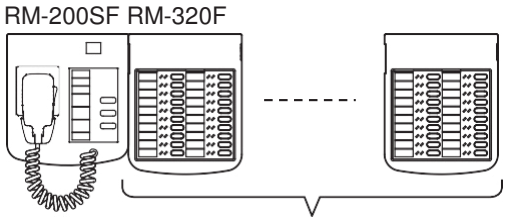


(When connecting 2 or more remote microphones: Example 2)

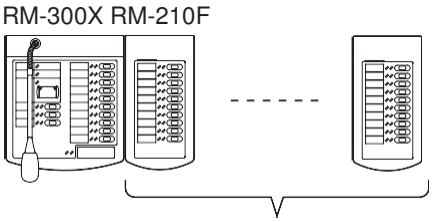


- The number of function keys can be increased by connecting the extension unit to each remote microphone as shown below.

(1) Up to 4 RM-320F units can be connected to the RM-200SF.
(2) Up to 7 RM-210F units can be connected to the RM-300X.



(1) Up to 4 units connectable



(2) Up to 7 units connectable

Notes

- The number of remote microphones to which power can be supplied from the VX-3308WM is limited depending on the configuration of the VX-3308WM or remote microphone. (See p. 3-43.)
- The remote microphone to which power cannot be supplied from the VX-3308WM needs the power supply from the AD-246 Ac adapter or VX-3308WM. If the remote microphone is required to be operated even during power failure, power needs be supplied from the VX-3308WM. (See p. 3-43.)

4.2.2. Power supply and limit on the number of remote microphones

The number of remote microphones connectable in a system is as follows.

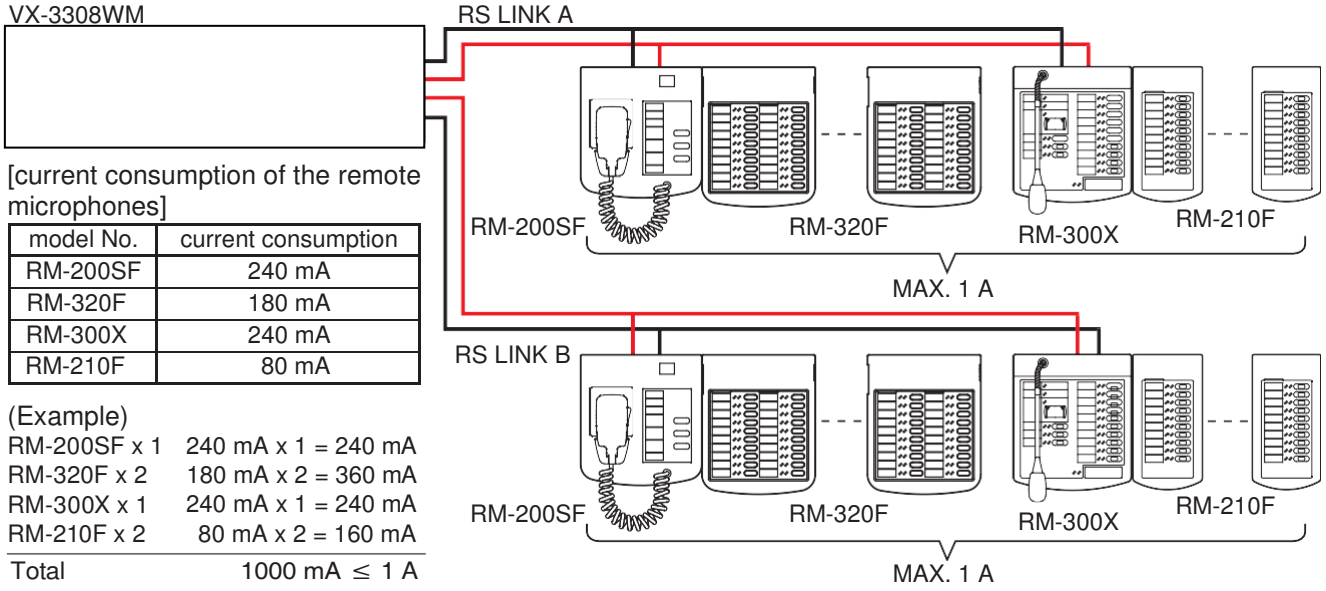
- Up to 2 RM-200SFs and up to 6 RM-300Xs (8 units in total) can be connected to the VX-3308WM.
- Up to 4 RM-320Fs can be connected to the RM-200SF, and up to 7 RM-210Fs to the RM-300X.

The method of power supply to the remote microphones differs depending on the system application and configuration, and also type of remote microphone. In a system configuration, the allowable number of the microphones connected to the VX-3308WM may be limited.

[Power supply to the remote microphones]

Note : red lines are DC power lines. Black lines are other control lines.

- Each of the VX-3308WM's RS LINKs A and B is capable of supplying the maximum current of 1 A. Ensure that the total current consumption of the remote microphones to be connected to each RS LINK is 1 A or less. When power is not supplied from an AC adaptor or the DC output terminal (50) of the VX-3308WM, the number of the remote microphones connectable to each RS LINK is up to 2 units in combination of the RM-200SF and RM-300X.



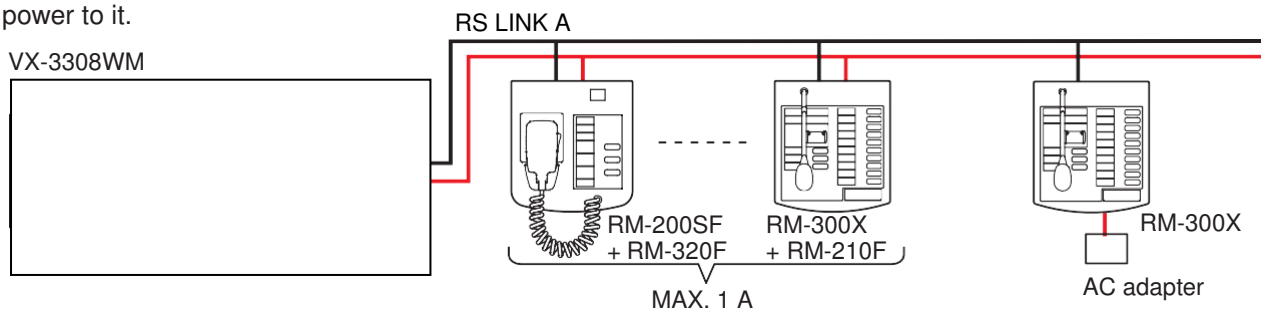
[current consumption of the remote microphones]

model No.	current consumption
RM-200SF	240 mA
RM-320F	180 mA
RM-300X	240 mA
RM-210F	80 mA

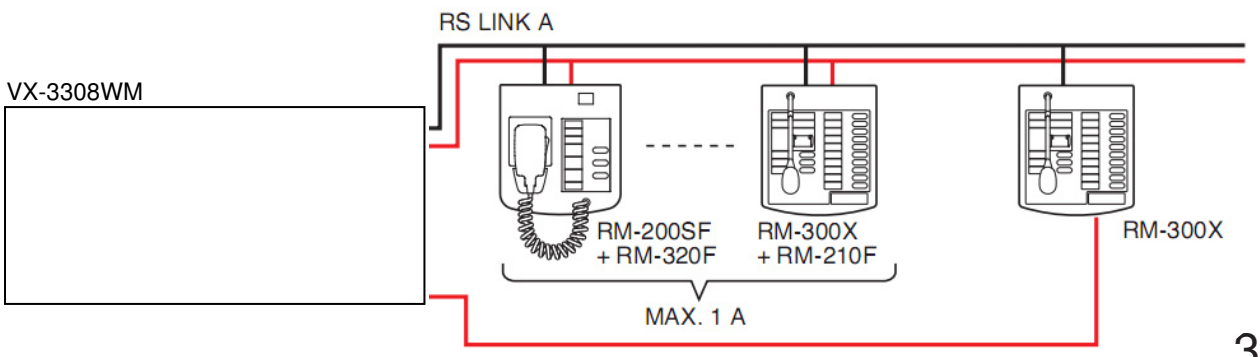
(Example)

RM-200SF x 1	240 mA x 1 = 240 mA
RM-320F x 2	180 mA x 2 = 360 mA
RM-300X x 1	240 mA x 1 = 240 mA
RM-210F x 2	80 mA x 2 = 160 mA
Total	1000 mA ≤ 1 A

- If the total current consumption of the remote microphones to be connected to each RS LINK exceeds 1 A, the Ac adapter or VX-3308WM is additionally required to compensate the power supply for the excessive amount of current.
- If a remote microphone does not need to operate during power failure, the AC adapter can be used to supply power to it.



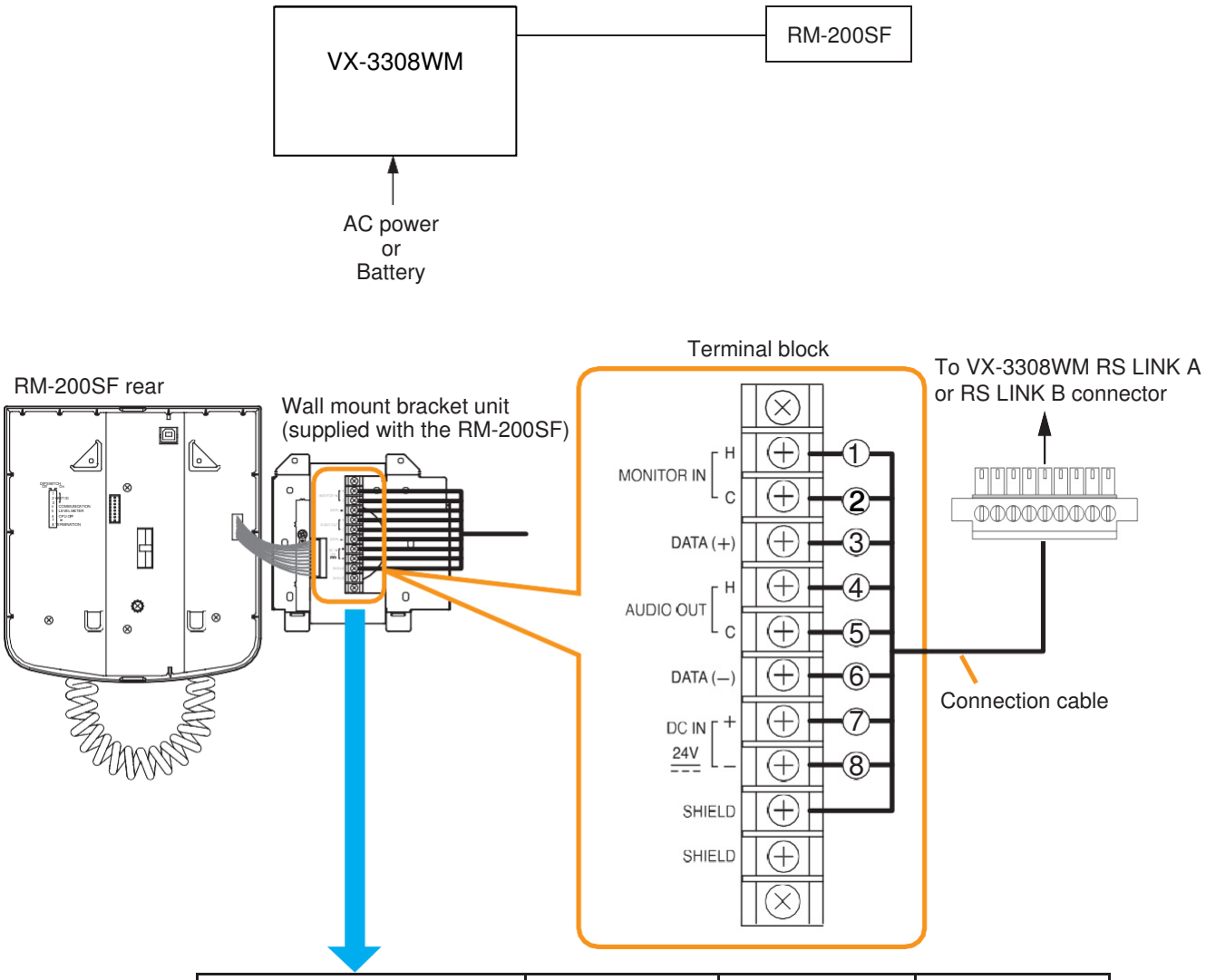
- If a remote microphone needs to operate during power failure, use the VX-3308WM to supply power to it.



4.2.3. RM-200SF connection

connect the RM-200SF to either of the RS LINK A or RS LINK B connector of the VX-3308WM.
The maximum cable distance depends on how power is supplied.

[when power is supplied from the VX-3308WM used RS LINK power supply]



Wall mount bracket unit (supplied with the RM-200SF)	RJ45 connector pin No.	Cable color (T568B type)	Cable color (T568A type)
MONITOR IN (H)	①	Orange/White	Green/White
MONITOR IN (C)	②	Orange	Green
DATA (+)	③	Green/White	Orange/White
AUDIO OUT (H)	④	Blue	Blue
AUDIO OUT (C)	⑤	Blue/White	Blue/White
DATA (–)	⑥	Green	Orange
DC IN 24 V (+)	⑦	Brown/White	Brown/White
DC IN 24 V (–)	⑧	Brown	Brown
SHIELD	Shield	——	——

- When the VX-3308WM is operating on AC power

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
STP category 5	336 m	191 m	132 m	101 m	81 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows.

No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
ø0.65 mm	555 m	315 m	219 m	167 m	135 m
ø0.9 mm	1081 m	613 m	426 m	326 m	263 m
ø1.2 mm	1200 m	1086 m	755 m	577 m	465 m

- When the VX-3308WM is operating on battery

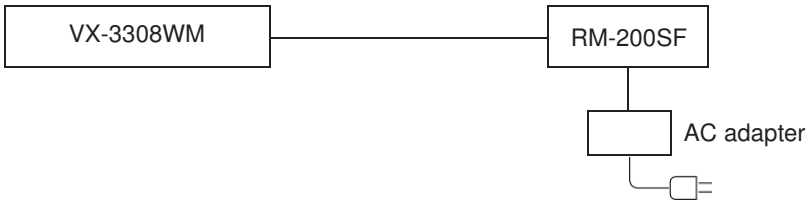
The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

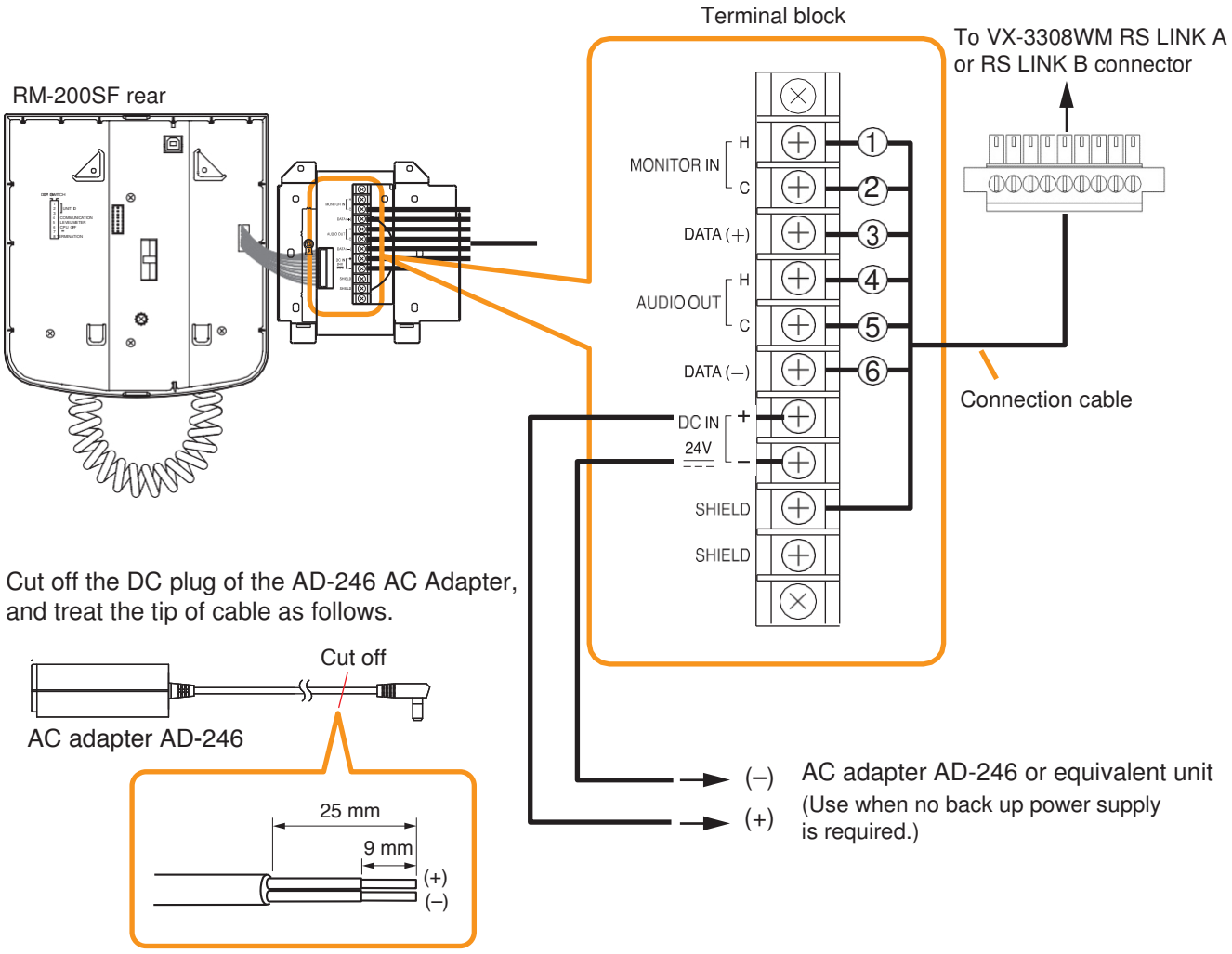
No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
STP category 5	92 m	51 m	35 m	26 m	20 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows.

No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
ø0.65 mm	152 m	85 m	58 m	43 m	34 m
ø0.9 mm	296 m	165 m	112 m	84 m	66 m
ø1.2 mm	524 m	292 m	199 m	149 m	118 m

[when power is supplied from the AC adapter]

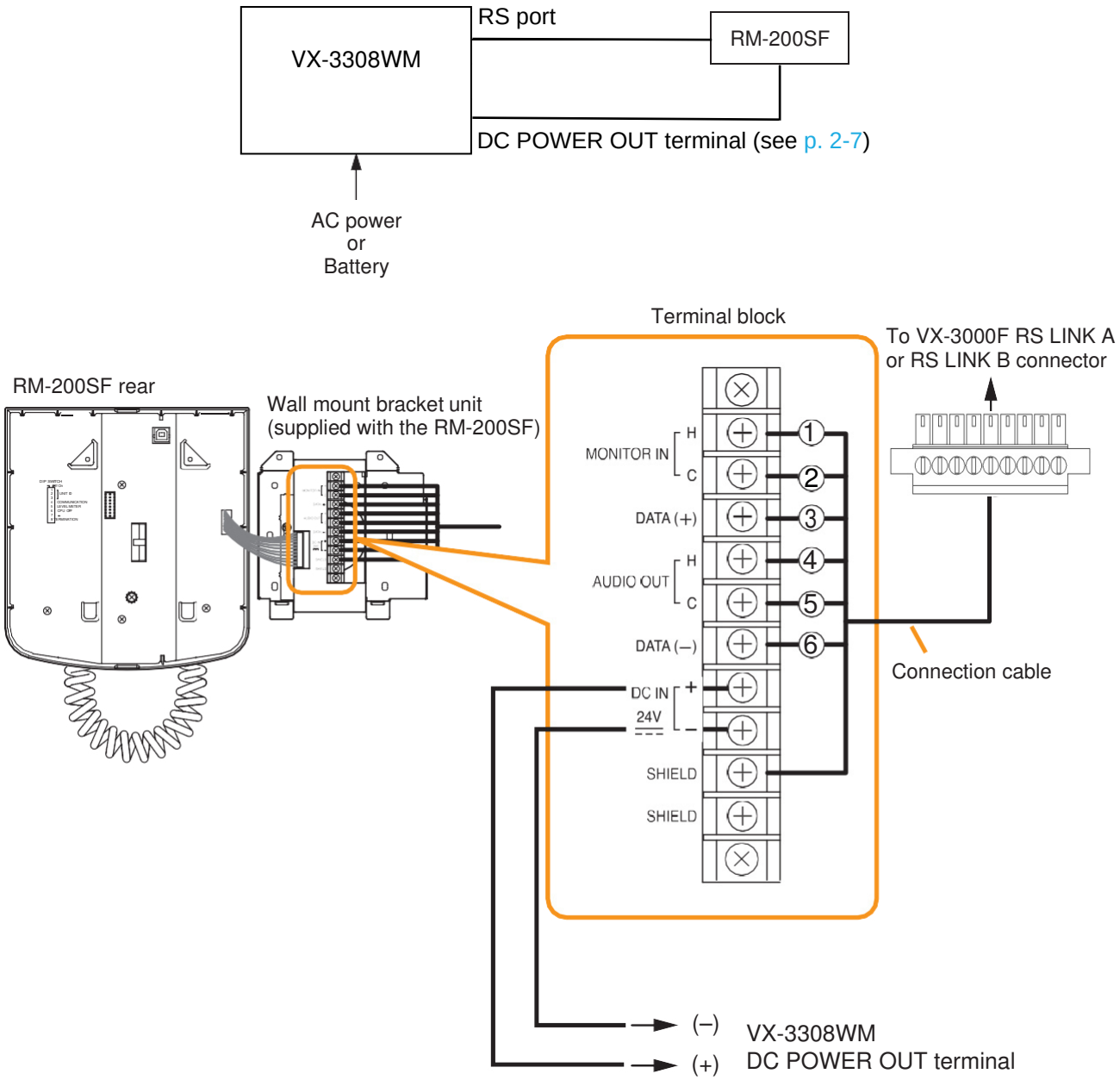




Usable AC adapter: 24 V DC/over 200 mA
(Operation range: 14 – 28 V DC)

When a STP category 5 straight cable or over 4-pair shielded CPEV cable is used as communication cable (excluding power line) between the RM-200SF and the VX-3308WM, the maximum cable distance in a system is 1200 m in total.

[when power is supplied from the VX-3000DS (or the VX-3150DS)]



When a STP category 5 straight cable is used as communication cable (excluding power line) between the RM-200SF and the VX-3308WM, the maximum cable distance in a system is 1200m in total.

- When the VX-3308WM is operating on AC power

The maximum distance of power cable between the RM-200SF and the VX-3308WM is as follows.

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
STP category 5	355 m	203 m	142 m	109 m	88 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows:

No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
ø0.65 mm	586 m	335m	234 m	180 m	146 m
ø0.9 mm	1141 m	652 m	456 m	351 m	285 m
ø1.2 mm	1200 m	1154 m	808 m	621 m	505 m

- When the VX-3308WM is operating on battery

The maximum distance of power cable between the RM-200SF and the VX-3308WM is as follows.

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

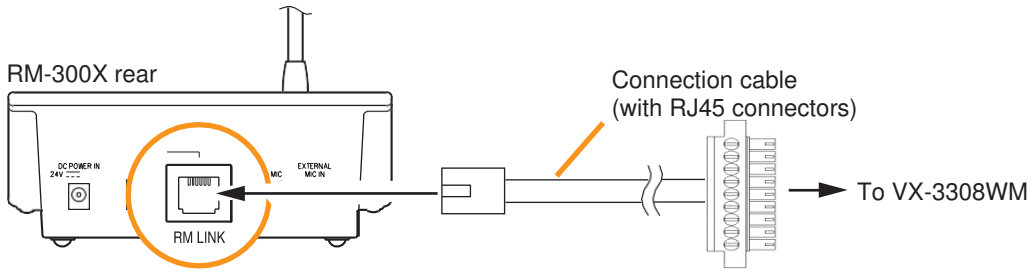
No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
STP category 5	111 m	63 m	44 m	34 m	27 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows.

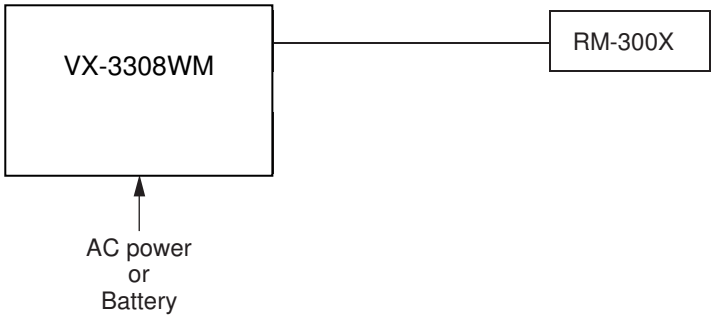
No. of extension units / cable	RM-200SF alone	RM-200SF + RM-320F x 1	RM-200SF + RM-320F x 2	RM-200SF + RM-320F x 3	RM-200SF + RM-320F x 4
ø0.65 mm	183 m	104 m	73 m	56 m	45 m
ø0.9 mm	356 m	203 m	142 m	109 m	89 m
ø1.2 mm	631 m	360 m	252 m	194 m	157 m

4.2.4. RM-300X connection

connect the RM-300X to either of the RS LINK A or RS LINK B connector of the VX-3308WM.
The maximum cable distance depends on how power is supplied.



[when power is supplied from the VX-3308WM used with the internal DC power supply]



- When VX-3308WM is operating on AC power

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
STP category 5	336 m	251 m	200 m	166 m
No. of extension units / cable	**RM-300X + RM-210F x 4**	**RM-300X + RM-210F x 5**	**RM-300X + RM-210F x 6**	**RM-300X + RM-210F x 7**
STP category 5	142 m	124 m	110 m	98 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. (for the cable connection, see p. 3-51.)
The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows:

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
ø0.65 mm	555 m	415 m	331 m	275 m
ø0.9 mm	1081 m	808 m	644 m	535 m
ø1.2 mm	1200 m	1200 m	1141 m	948 m
No. of extension units / cable	**RM-300X + RM-210F x 4**	**RM-300X + RM-210F x 5**	**RM-300X + RM-210F x 6**	**RM-300X + RM-210F x 7**
ø0.65 mm	235 m	205 m	182 m	163 m
ø0.9 mm	457 m	399 m	354 m	317 m
ø1.2 mm	810 m	707 m	626 m	562 m

- When the VX-3308WM is operating on battery

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
STP category 5	92 m	68 m	54 m	44 m
No. of extension units / cable	**RM-300X + RM-210F x 4**	**RM-300X + RM-210F x 5**	**RM-300X + RM-210F x 6**	**RM-300X + RM-210F x 7**
STP category 5	37 m	32 m	28 m	25 m

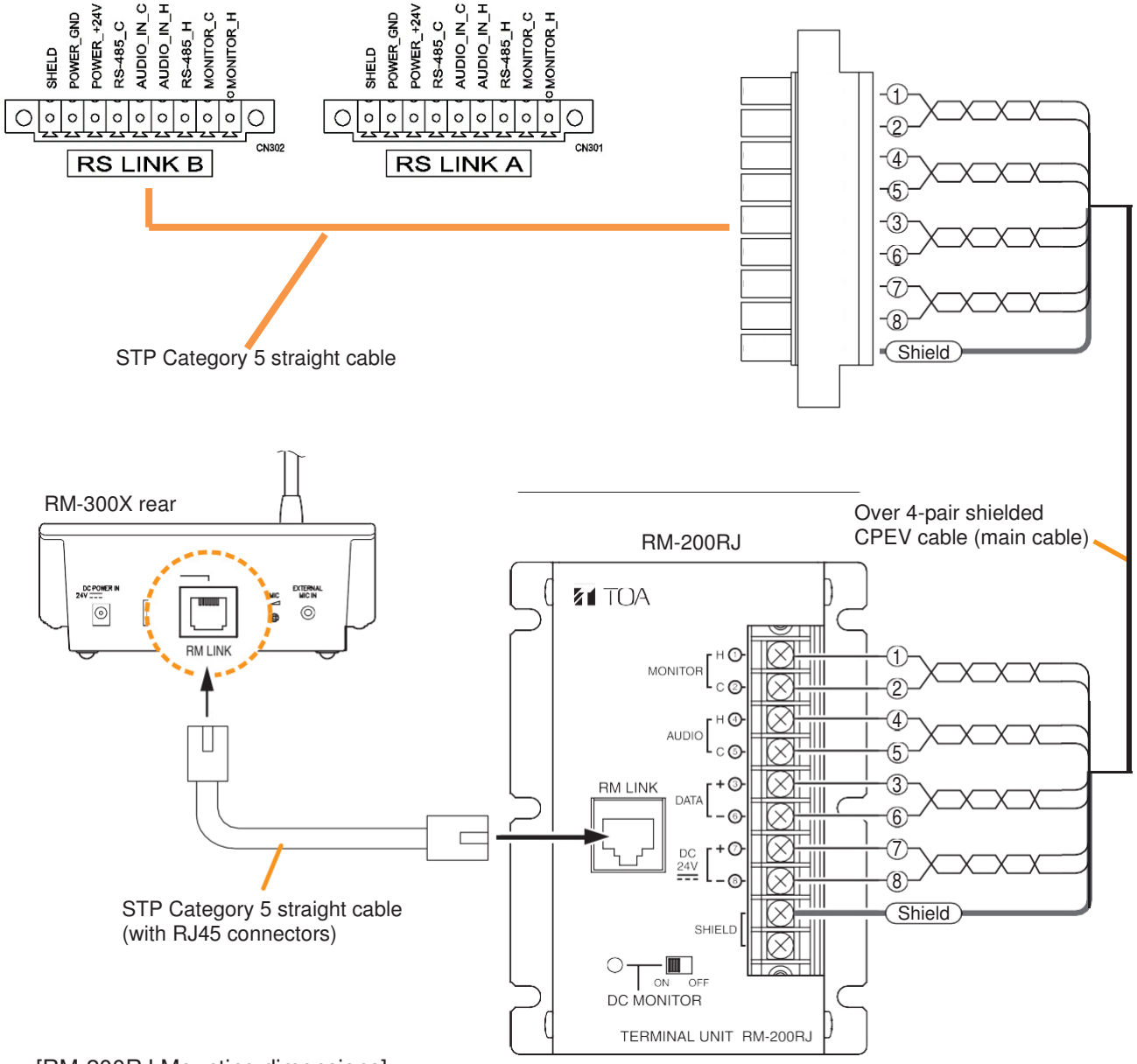
To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. (for the cable connection, see p. 3-51.)
The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows:

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
ø0.65 mm	152 m	113 m	89 m	73 m
ø0.9 mm	296 m	220 m	174 m	143 m
ø1.2 mm	524 m	389 m	308 m	253 m
No. of extension units / cable	**RM-300X + RM-210F x 4**	**RM-300X + RM-210F x 5**	**RM-300X + RM-210F x 6**	**RM-300X + RM-210F x 7**
ø0.65 mm	62 m	54 m	47 m	42 m
ø0.9 mm	121 m	105 m	92 m	82 m
ø1.2 mm	215 m	186 m	163 m	145 m

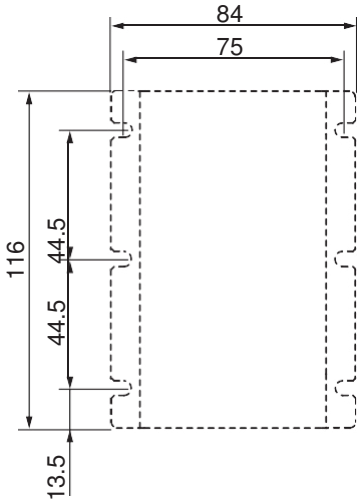
Tips

- When using a shielded CPEV cable, it is recommended to use an optional RM-200RJ Terminal Unit that serves wiring conversion between the CPEV cable and STP category 5 straight cable (with RJ45 connectors). connect the CPEV cable between the same terminals of both RM-200RJ units pairing cables 1 with 2, 4 with 5, 3 with 6, and 7 with 8 as shown below.

VX-3308WM

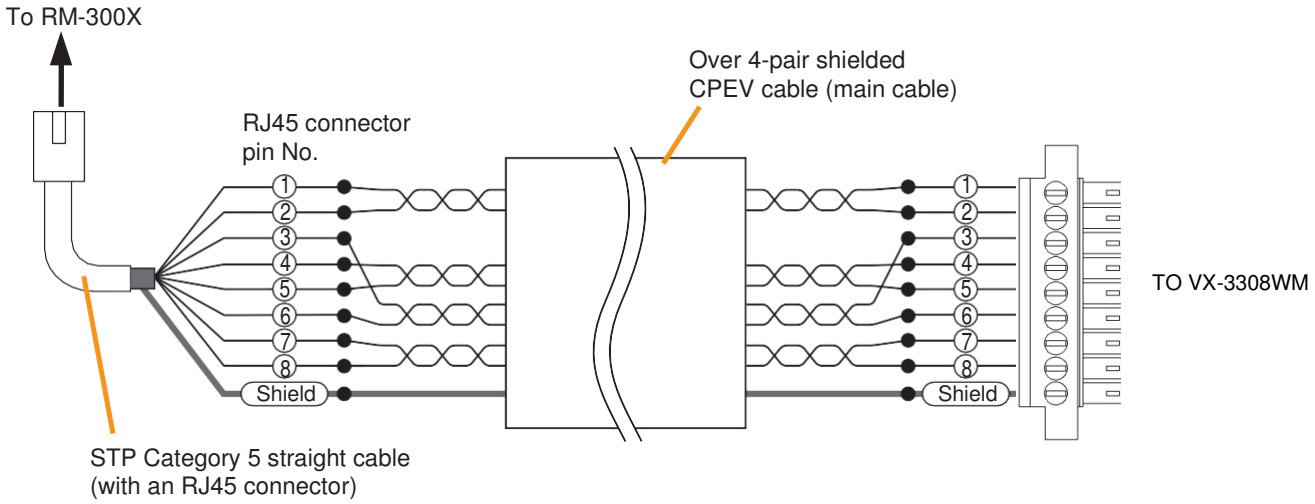


[RM-200RJ Mounting dimensions]



Tip
The RM-200RJ can be installed on a desk or to a wall.

- When using a shielded CPEV cable but not the RM-200RJ, connect the cable to STP Category 5 straight cable (with RJ45 connectors) as follows.
  Pair 1 with 2, 3 with 6, 4 with 5, and 7 with 8.

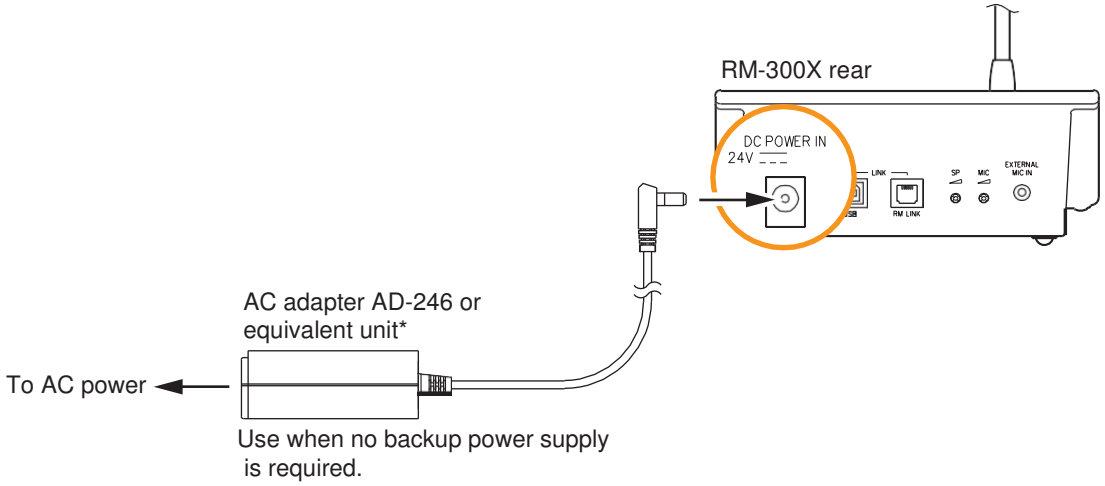


RM-300X	RJ45 connector pin No.	Cable color (T568B type)	Cable color (T568A type)	VX-3308WM
Monitor in (H)	①	Orange/White	Green/White	Monitor out (H)
Monitor in (C)	②	Orange	Green	Monitor out (C)
RM data (+)	③	Green/White	Orange/White	RM data (+)
Audio out (H)	④	Blue	Blue	Audio in (H)
Audio out (C)	⑤	Blue/White	Blue/White	Audio in (C)
RM data (–)	⑥	Green	Orange	RM data (–)
DC power in (+)	⑦	Brown/White	Brown/White	DC power out (+)
DC power in (–)	⑧	Brown	Brown	DC power out (–)
Shield	Shield	——	——	Shield

[when power is supplied from the AC adapter]

When supplying power to the RM-300X from the optional AD-246 AC Adapter using an STP category 5 straight cable or over 4-pair shielded CPEV cable, the maximum length of connection cable (excluding power line) is 1200 m regardless of the type of cable and the number of remote microphone extension units.

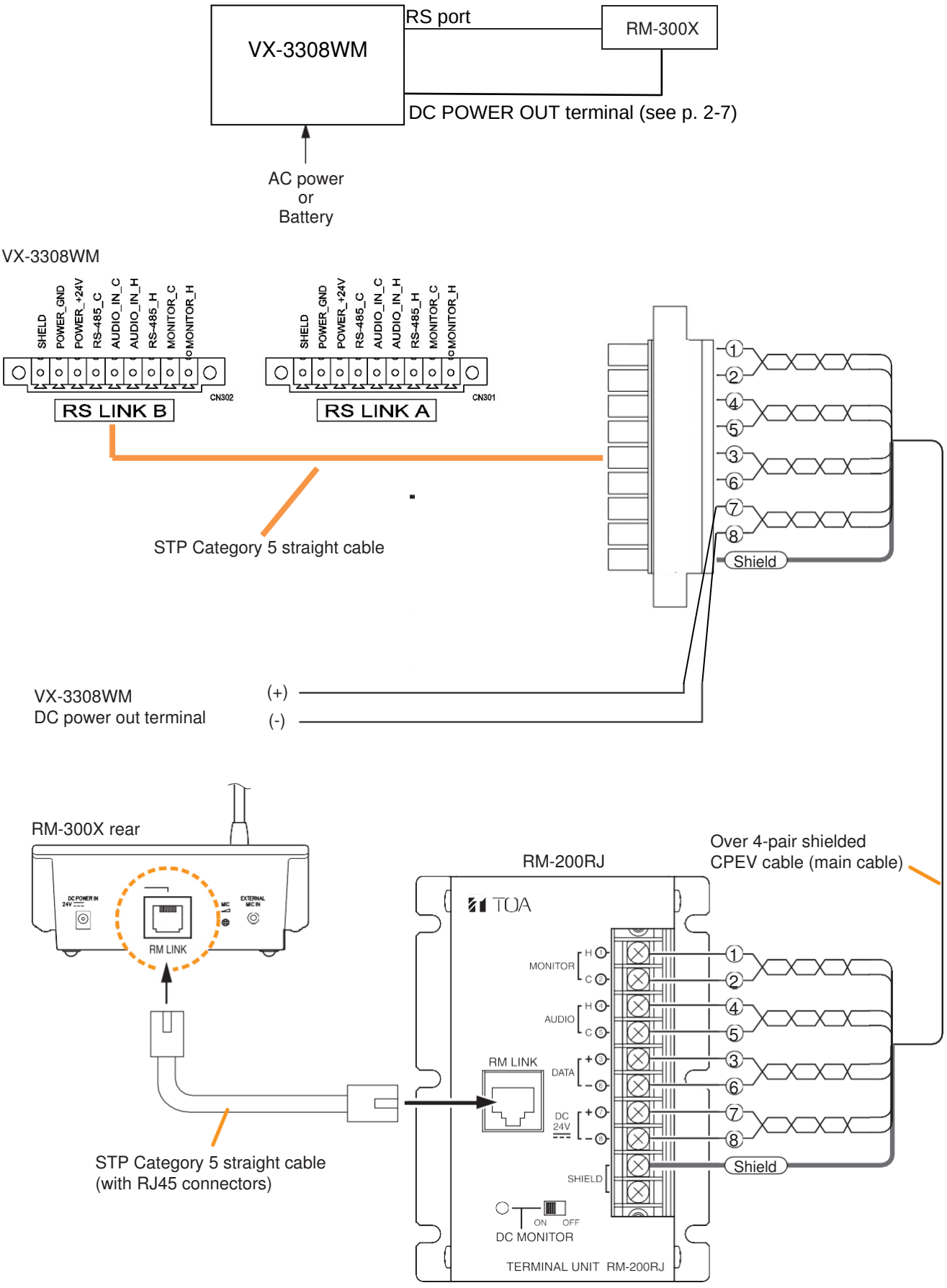
Note
To power the remote microphones even during power failures, a battery backup is also needed for the AC adapter.
Or supply power to the remote microphones from the VX-3308WM without using the AC adapter.



* Usable AC adapter
24 V DC/over 200 mA (Operation range: 14 – 28 V DC)
Usable power output plug: Non-polarity type (Any polarity can be used.)
(5.5 mm outer diameter, 2.1 mm inner diameter, and 9.5 mm long)

Note
Plugging a DC plug into the RM-300X's power input terminal automatically switches the RM-300X's DC power input to this terminal, disconnecting the unit's power supply from the RM link connector.
Be sure to firmly secure the DC plug by fixing the power cable onto the RM-300X's bottom-mounted cable hook. If the DC plug is pulled out, the RM link connector takes over the unit's power supply and is connected to the system power line. This may cause the voltage drop of power supply and increase the current consumption from the VX-3308WM, resulting in the system malfunction.

[when power is supplied from the VX-3308WM Internal DC power supply]



When a STP category 5 straight cable is used as communication cable (excluding power line) between the RM-300X and the VX-3000f, the maximum cable distance in a system is 1200 m in total.

- When the VX-3308WM is operating on AC power

The maximum distance of power cable between the RM-300X and the VX-3308WM is as follows.

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
STP category 5	355 m	266 m	213 m	177 m
No. of extension units / cable	RM-300X + RM-210F x 4	RM-300X + RM-210F x 5	RM-300X + RM-210F x 6	RM-300X + RM-210F x 7
STP category 5	152 m	133 m	118 m	106 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. (for the cable connection, see p. 3-51.)
The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows:

No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
ø0.65 mm	586 m	440 m	352 m	293 m
ø0.9 mm	1141 m	856 m	684 m	570 m
ø1.2 mm	1200 m	1200 m	1200 m	1010 m
No. of extension units / cable	RM-300X + RM-210F x 4	RM-300X + RM-210F x 5	RM-300X + RM-210F x 6	RM-300X + RM-210F x 7
ø0.65 mm	251 m	220 m	195 m	176 m
ø0.9 mm	489 m	428 m	380 m	342 m
ø1.2 mm	865 m	757 m	673 m	606 m

- When the VX-3308WM is operating on battery

The maximum distance of power cable between the RM-300X and the VX-3308WM is as follows.

The following table shows the maximum cable distance when STP category 5 straight cable (with RJ45 connectors) is used.

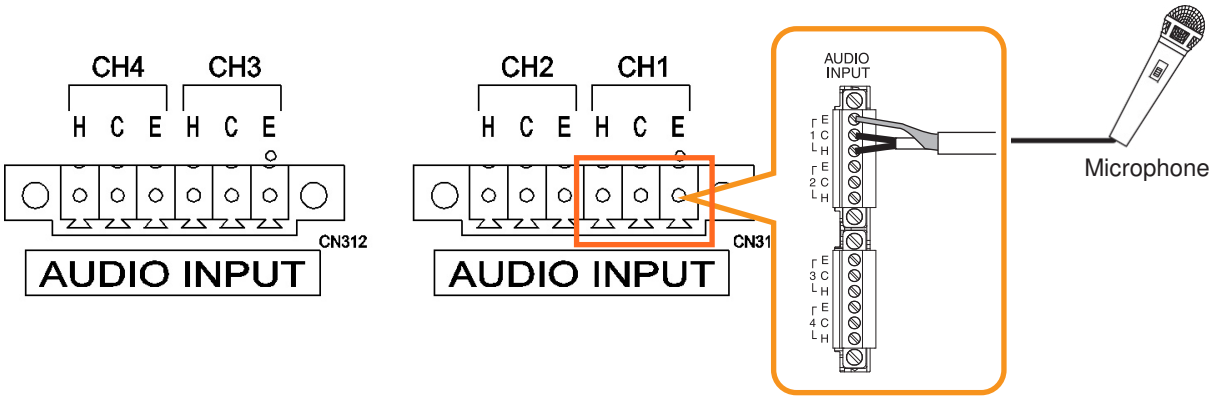
No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
STP category 5	111 m	83 m	66 m	55 m
No. of extension units / cable	RM-300X + RM-210F x 4	RM-300X + RM-210F x 5	RM-300X + RM-210F x 6	RM-300X + RM-210F x 7
STP category 5	47 m	41 m	37 m	33 m

To make longer cable lengths than those shown in the above table, use over 4-pair shielded CPEV cable. (for the cable connection, see p. 3-51.)
The relationship of the CPEV cable conductor diameter to the maximum cable distance is as follows:

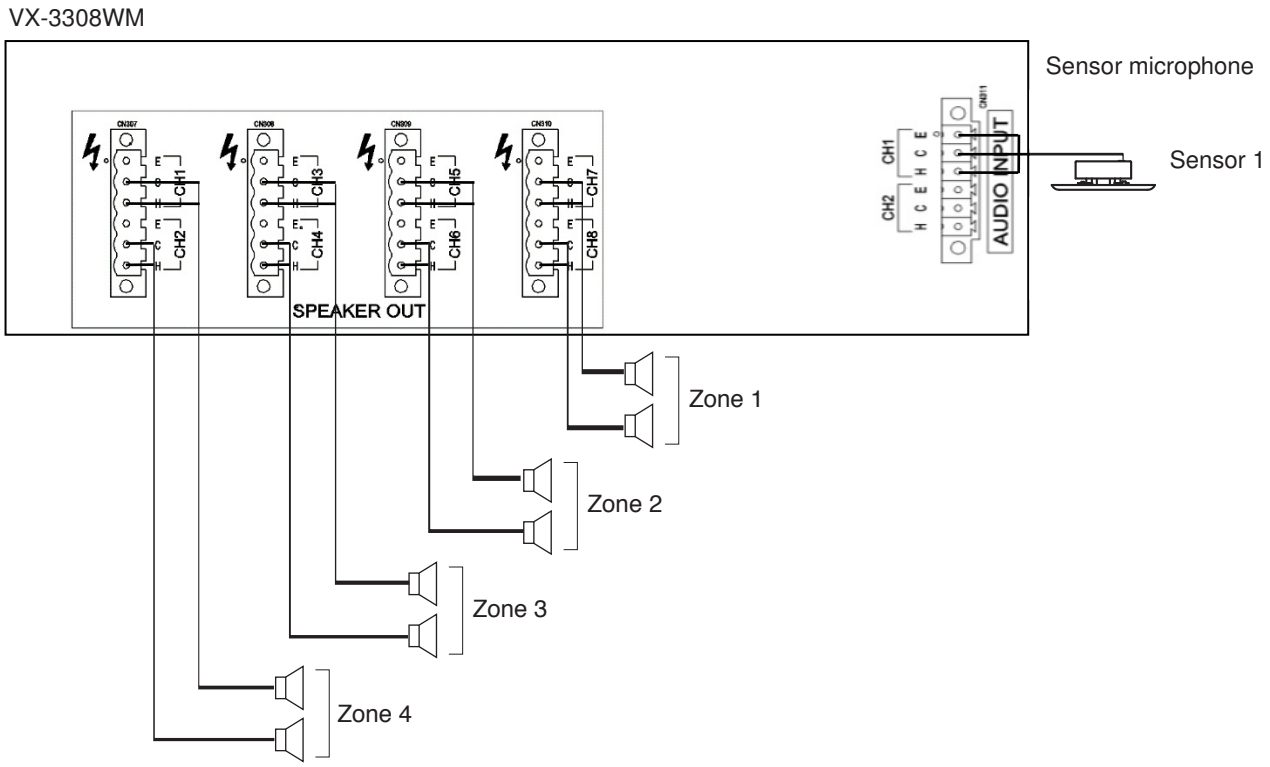
No. of extension units / cable	RM-300X alone	RM-300X + RM-210F x 1	RM-300X + RM-210F x 2	RM-300X + RM-210F x 3
ø0.65 mm	183 m	137 m	110 m	91 m
ø0.9 mm	356 m	267 m	214 m	178 m
ø1.2 mm	631 m	473 m	378 m	315 m
No. of extension units / cable	RM-300X + RM-210F x 4	RM-300X + RM-210F x 5	RM-300X + RM-210F x 6	RM-300X + RM-210F x 7
ø0.65 mm	78 m	68 m	61 m	55 m
ø0.9 mm	152 m	133 m	118 m	107 m
ø1.2 mm	270 m	236 m	210 m	189 m

4.2.5. Connecting other input equipment

Connect microphones or other sound sources with audio inputs using 2-core shielded cables.
Four input channels (1 through 4) are provided for the AUDIO INPUT. Use the VX-3000 Setting Software to set their volume, purpose, and type, etc. (See the separate Setting Software Instructions, "Unit configuration setting.")



[When using the ANC function]
Connect a sensor microphone when using the ANC function.
The ANC setting applies to a single or multiple audio output channel numbers within the preset unit.
You need to perform settings for ANC function using the VX-3000 Setting Software.

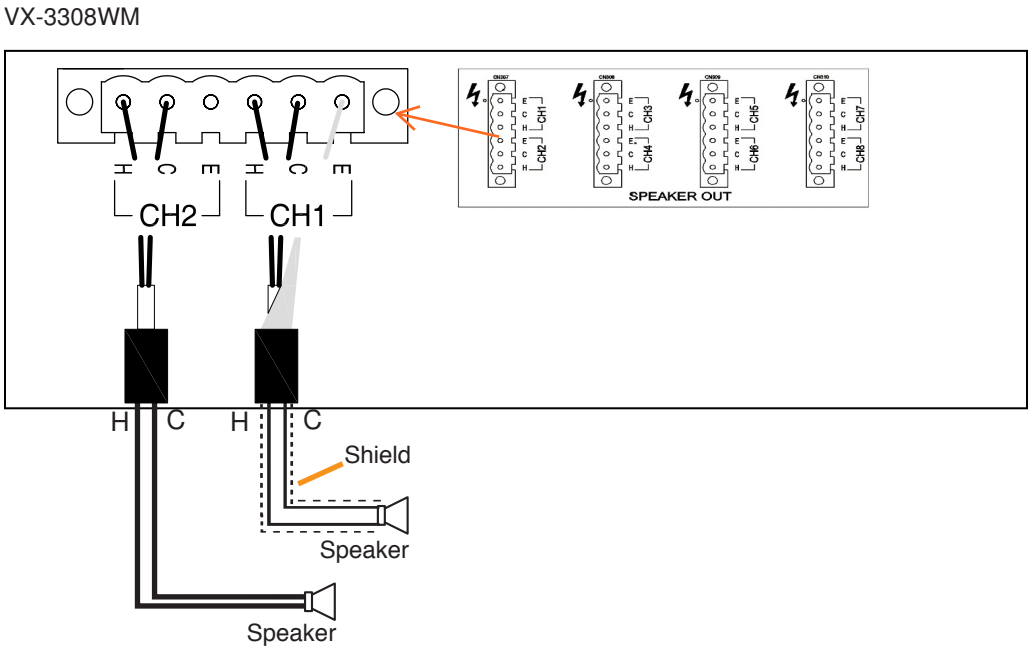


In addition, you need to perform work and settings for sound output at the installation site after completing the device connections.
for details, see the separate Setting Software Instructions, "ANC function."

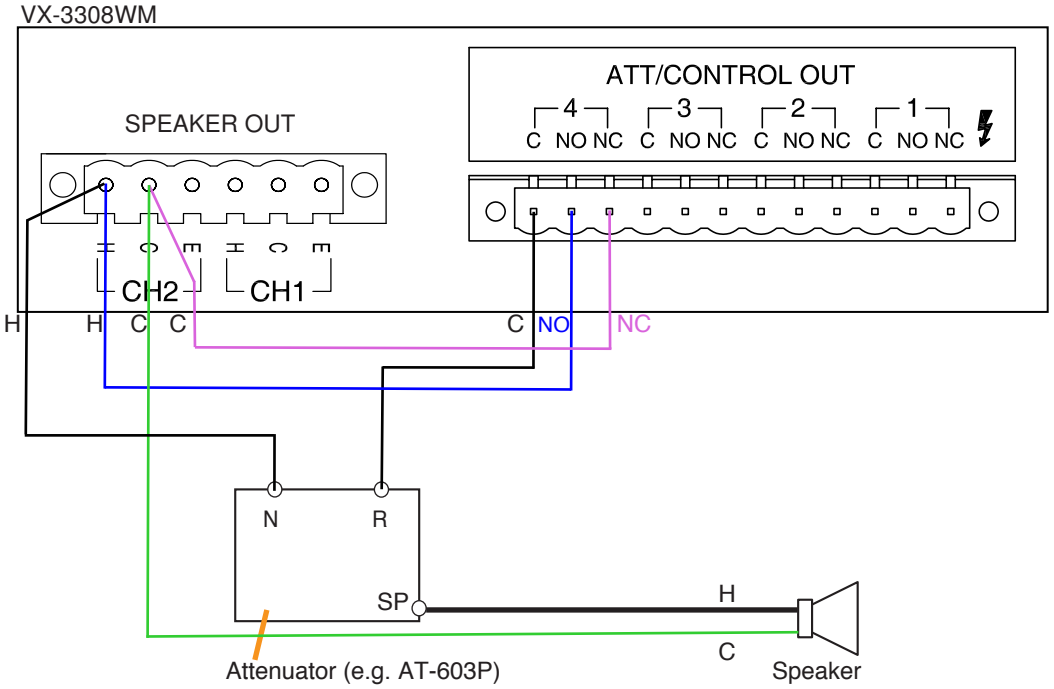
4.3. Speaker Connection

Connect speakers to the speaker output terminal.
Following 3 types of wiring systems are available: 2-wire system where no attenuator is connected, and 3-wire and 4-wire systems where attenuators are connected.
Failure detection is available if the EOL unit is connected.

4.3.1. 2-wire system connection



4.3.2. 3-wire system connection



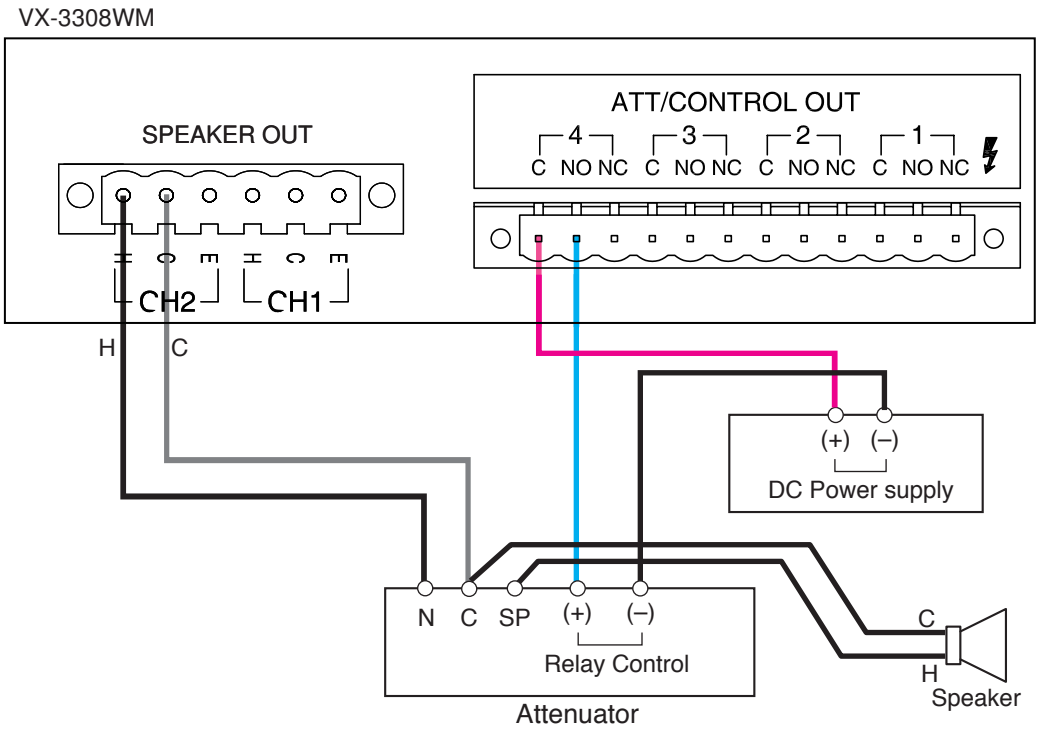
Note
When initializing the Surveillance settings, the total speaker wattage per line should be 20 W (500 Ω) or more. lighter speaker load may cause false detection.

4.3.3. 4-wire system connection

Two types of attenuators are connectable to this unit, one to be bypassed when 24 V DC is applied to the attenuator, and the other to be bypassed when the 24 V DC being normally applied to is cut off (in no voltage mode). connections of the unit's attenuator control output and 24 V DC power supply's terminals differ depending on the types as shown below.

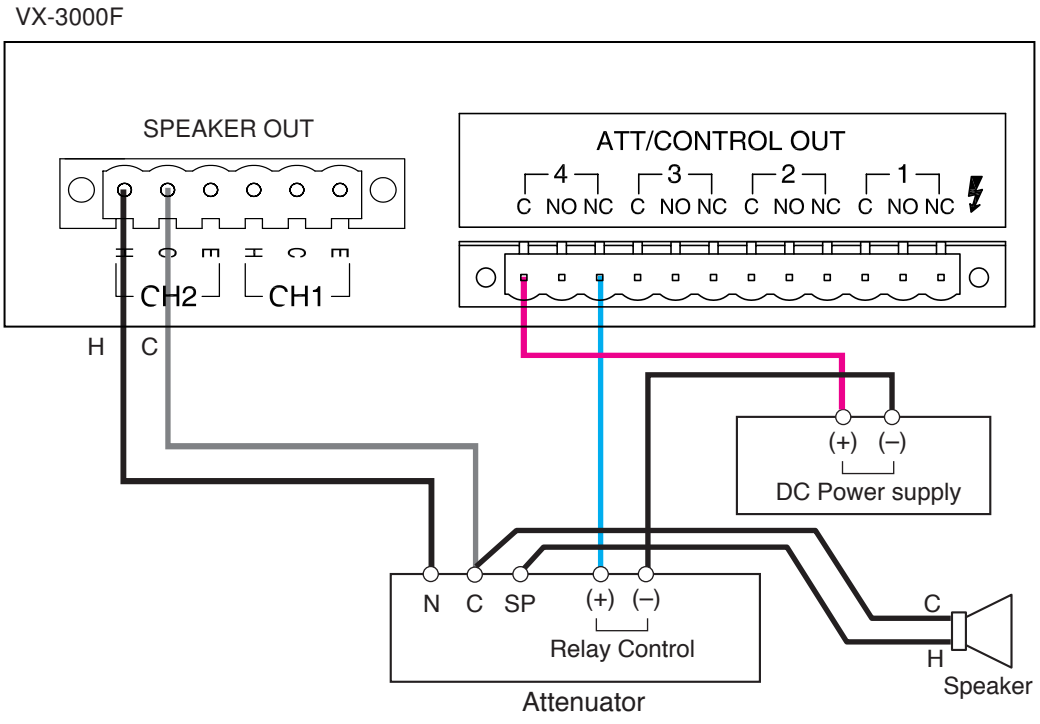
[Example 1]

Bypassed when 24 V DC is applied to the attenuator.



[Example 2]

Bypassed when the 24 V DC being normally applied to is cut off.



Note

The system in Example 2 is more fail-safe than that in Example 1.

4.3.4. End of line

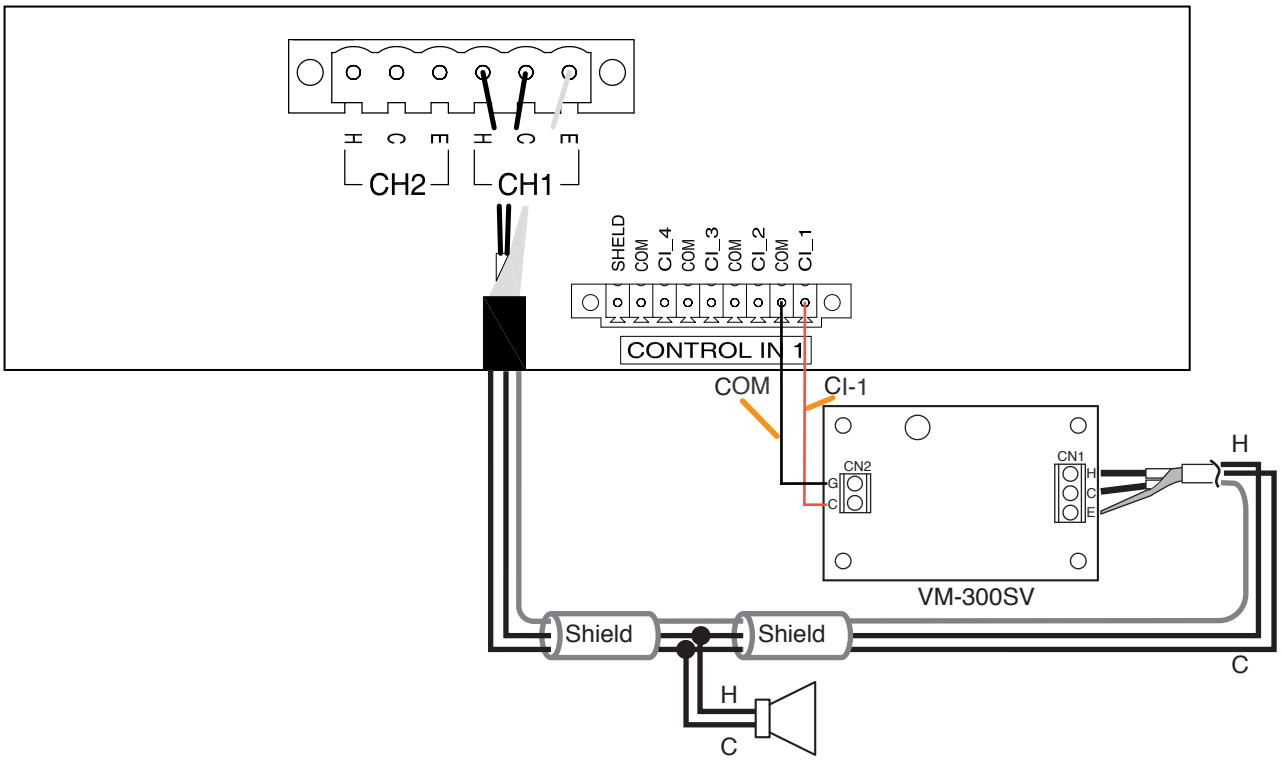
Speaker line failure can be detected with greater accuracy when the end of line units are connected.
Use the VM-300SV for the VX-3308WM.

[Example 1]

The figure below shows a connection example to connect the VM-300SV to the speaker line.

Notes
- Connect the VM-300SV between each speaker line end and the unit's control input terminal.
- While a broadcast is being made through the speaker line with the VM-300SV installed, speaker line failure function for that line cannot be performed.
- External attenuators cannot be used in the system with the VM-300SV installed.

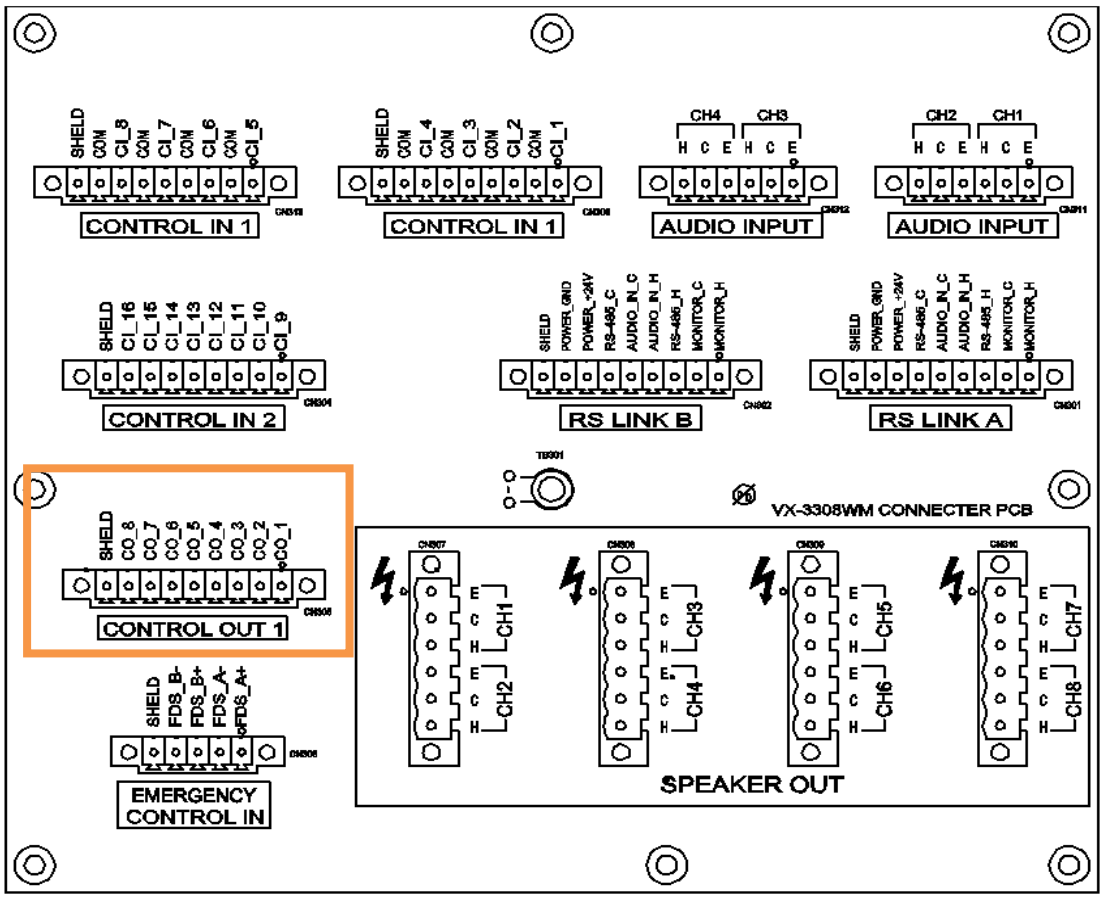
VX-3308WM



4.4. Control Output Terminal Connections & ATT Out

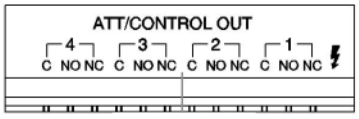
The CONTROL OUT 1 terminals provide control outputs of open-collector type.
The ATT/CONTROL OUT terminals provide control outputs of relay contact type.
Control signals (make contact) are output in synchronization with unit operation.

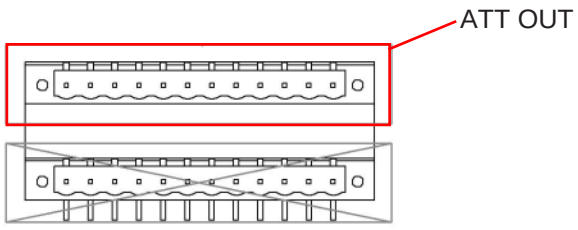
VX-3308WM

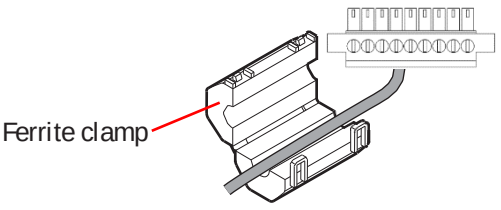


The Pluggable Terminal Block 's pin arrangement and pin functions are shown below.

Indication at terminal	CO_1	CO_2	CO_3	CO_4	CO_5	CO_6	CO_7	CO_8	SHIELD
Control output in software	9	10	11	12	13	14	15	16	Common



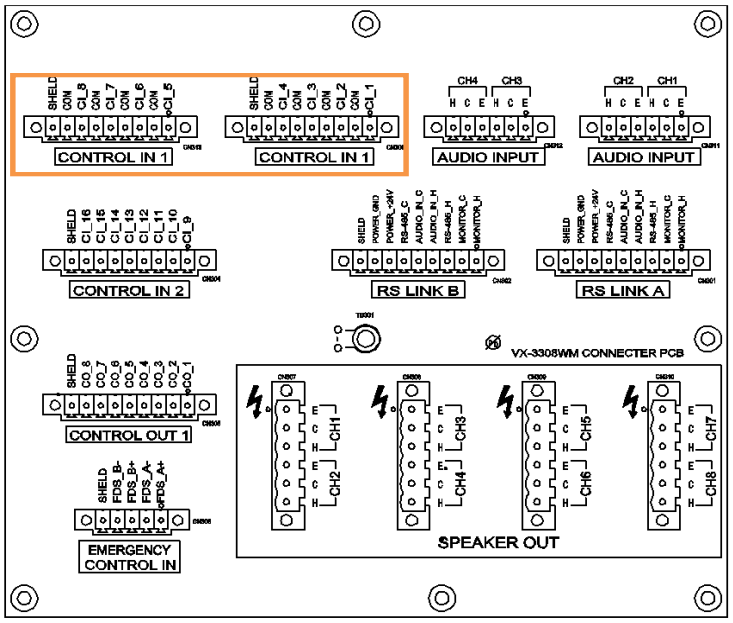


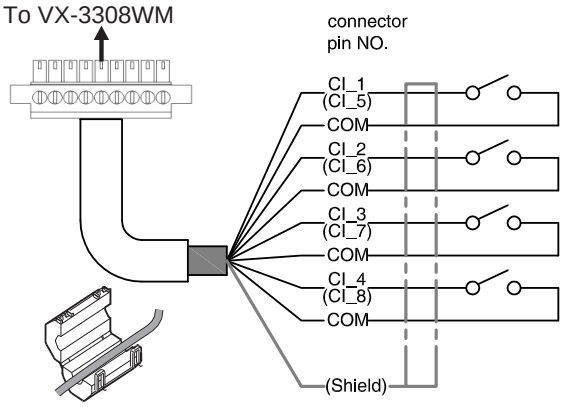


To reduce electromagnetic noise, place a ferrite cable clamp over the Shielded category 5 twisted pair cable (CAT5-STP) at a position within 20 cm (7.87") from the VX-3308WM's control output and ATT out connectors.
Ferrite cable clamp manufacturer:CORE MASTER ENTERPRISE CO.,LTD type:LF-1301

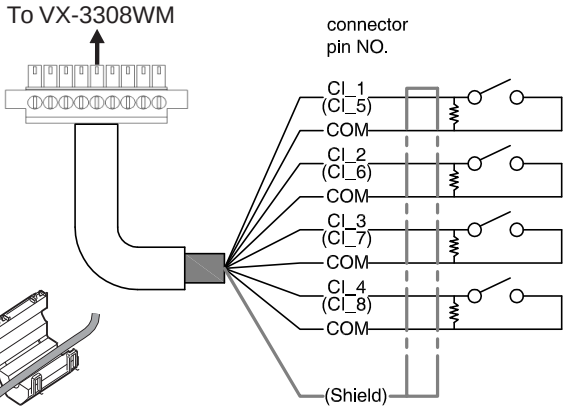
4.5. Control Input Terminal Connections

The control input terminals are non-voltage contact inputs. Cable disconnection and short circuit can be detected using these input terminals.
Set the function, polarity, and failure detection using the VX-3000 Setting Software.
(See the separate Setting Software Instructions, "SURVEILLANCE SETTINGS," "failure Pattern Settings," "control Inputs Event Settings.")

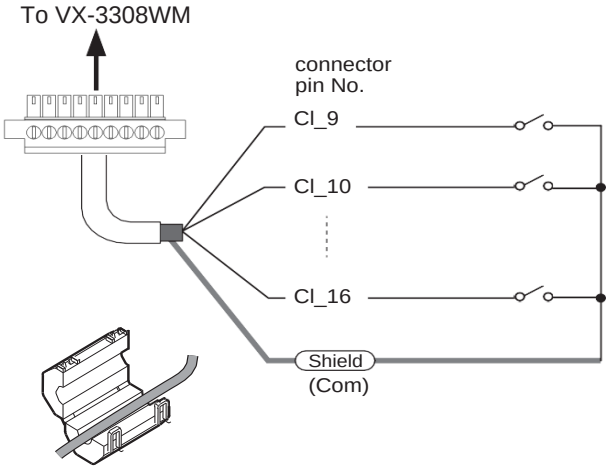


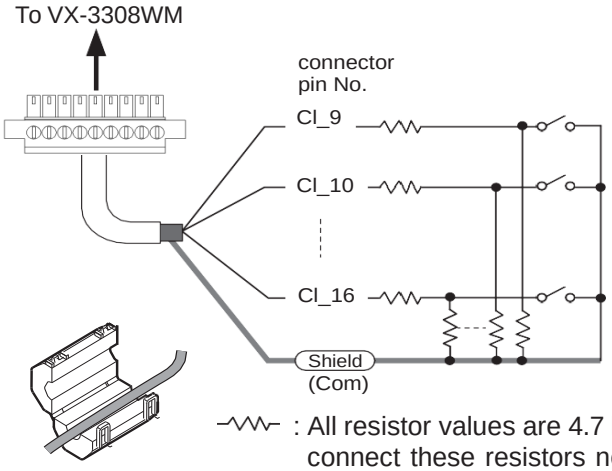


Connection when no failure detection is required



Connection when failure detection is required





: All resistor values are 4.7 kΩ. connect these resistors near the switch.

Note

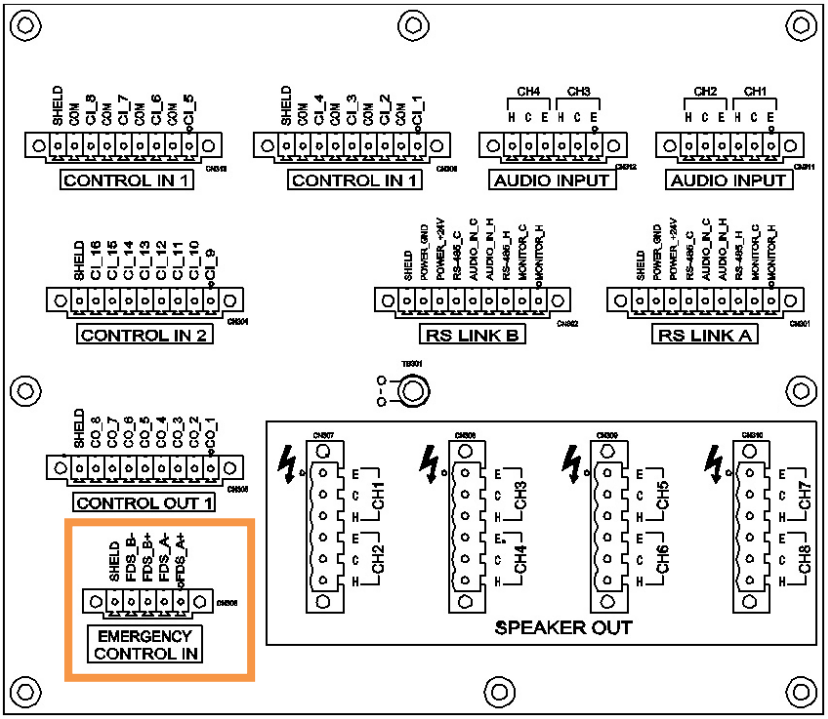
When connecting the VM-300SV to detect failures such as cable disconnection, you need not connect any resistors as they are connected inside the VM-300SV.

To reduce electromagnetic noise, place a ferrite cable clamp over the Shielded category 5 twisted pair cable (CAT5-STP) at a position within 20 cm (7.87") from the VX-3308WM's control output connectors.
Ferrite cable clamp manufacturer:CORE MASTER ENTERPRISE CO.,LTD type:LF-1301

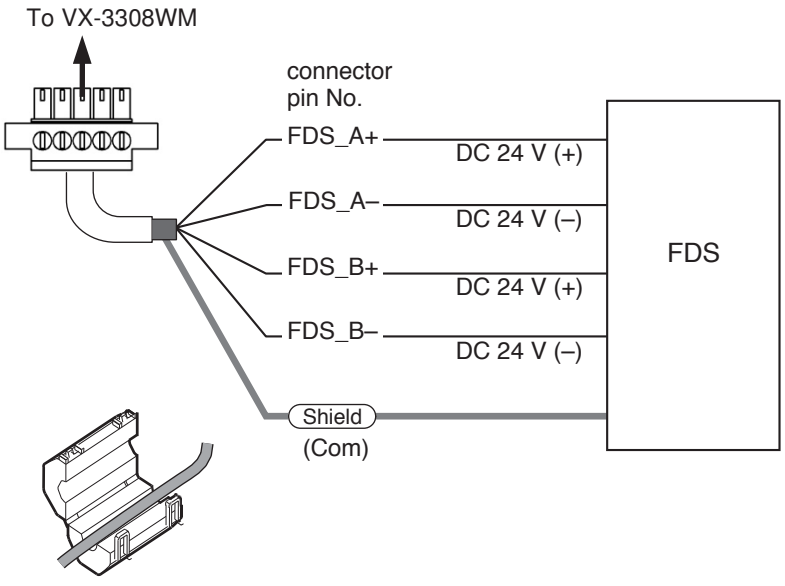
4.6. Emergency Control Input Terminal Connections

The Emergency control input terminals are voltage inputs. Cable disconnection and short circuit can be detected using these input terminals.
Use the VX-3000 Setting Software to set the function and polarity. (See the separate Setting Software Instructions, "SURVEILLANCE SETTINGS", "Failure Pattern Settings", "Control Input Event Settings.")

VX-3308WM



The Pluggable Terminal Block 's pin arrangement and pin functions are shown below.



Note

When the voltage control of the FDS has a galvanic connection to ground/earth, then set the Surveillance function corresponding to the CIN17 (Pins 1 and 2) or CIN18 (Pins 4 and 5) to OFF . (See the separate Setting Software Instructions, "SURVEILL ANCE SETTINGS.")
To reduce electromagnetic noise, place a ferrite cable clamp over the Shielded category 5 twisted pair cable (CAT5-STP) at a position within 20 cm (7.87") from the VX-3308WM's Emergency control in connectors.
Ferrite cable clamp manufacturer:CORE MASTER ENTERPRISE CO.,LTD type:LF-1301

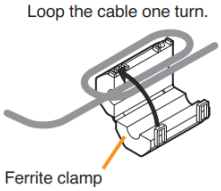
5. VX-3000 CONNECTION

5.1. LAN Link Connector Connections

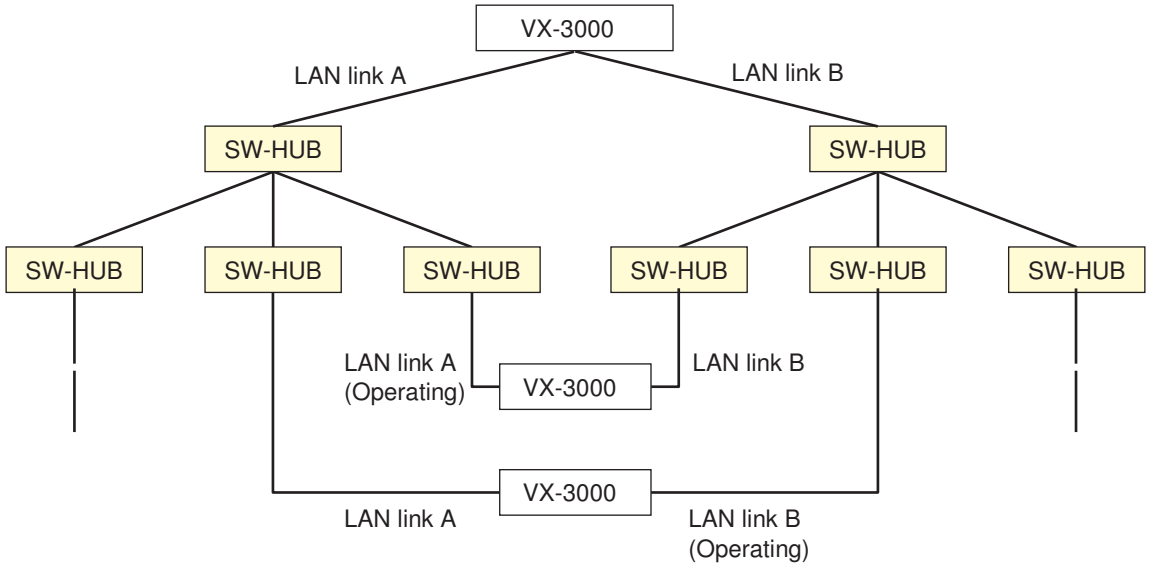
connect the LAN link connectors of all VX-3000 units within the system to each other via switching HUBs. connect each of LAN link connectors A and B to the same switching HUB or different switching HUBs connected in star configuration.
Also, since the VX-3000 has a HUB function compatible with RSTP (rapid Spanning Tree Protocol), loop connection is allowed between the VX-3000 units without the use of switching HUBs.

Notes

- Make the LAN link connectors completely independent from other LAN.
- Be sure to use STP Category 5 straight cable (with RJ45 connectors) for connecting LAN link connectors.
- The distance between each of VX-3000 and a switching HUB, and between switching HUBs is less than 100 m.
- Be sure to make connections of both terminals A and B.
- When using multiple switching HUBs, make a star connection as shown in the connection examples 4.
- To reduce electromagnetic noise, place a ferrite cable clamp over the Shielded category 5 twisted pair cable (CAT5-STP) at a position within 20 cm (7.87") from the VX-3308WM's control output connectors.
  Ferrite cable clamp manufacturer:CORE MASTER ENTERPRISE CO.,LTD type:LF-1301

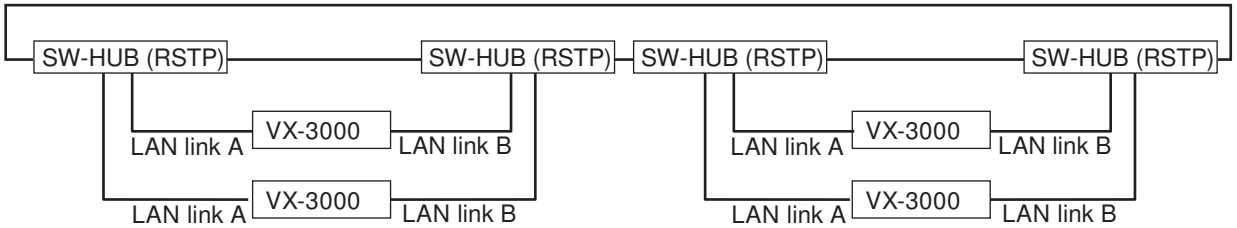


[Connection example 1: Redundant configuration of non-RSTP-compliant switching HUBs]

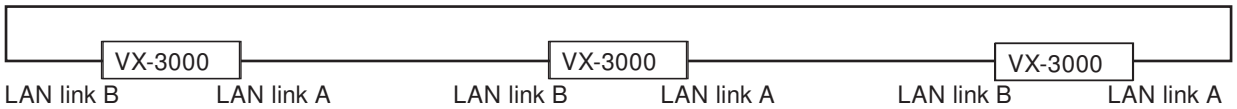


A method of connecting a single unit's LAN link A and B terminals to each different switching HUB to prevent the system from going down when a cable is broken or power fails.

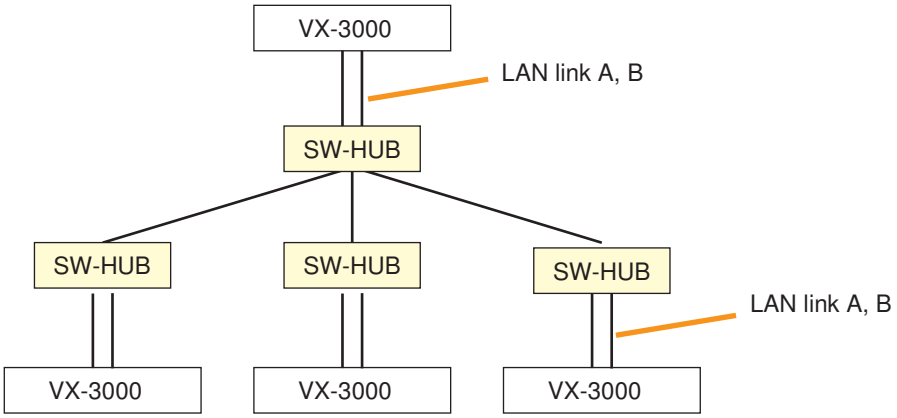
[Connection example 2: Redundant configuration of RSTP-compliant switching HUBs]



[Connection example 3: Redundant configuration when no switching HUBs are used]



[Connection example 4: Non-redundant configuration of non-RSTP-compliant switching HUBs]

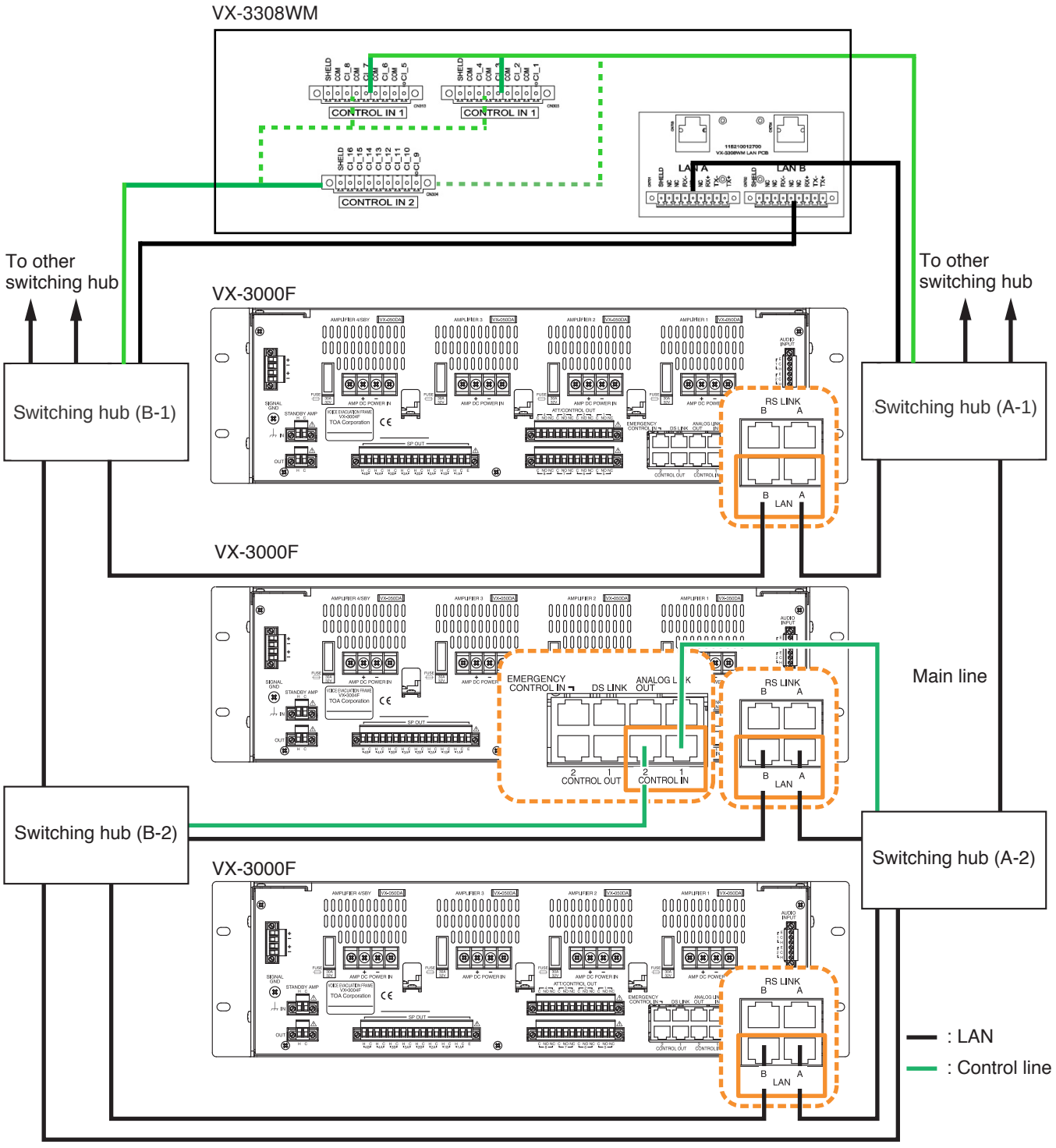


5.1.1. Redundant configuration of switching HUBs

In the connection example below, the LAN link A and B connectors of each unit are individually connected to different switching HUBs. By using switching HUBs with failure status output function, if any one of switching HUBs fails or the main line breaks, such a failure can be detected.

Notes

- Up to 7-level cascade is allowed for switching HUB connections.
- After connection completion, reactivate the VX-3000 by pressing the Reset key on its front panel.
- Perform spanning tree setting within switching HUBs. For the setting, contact your network administrator.
- The "External failure input" function needs be assigned to the unit's control input terminal to which the switching HUB's failure status output is connected. (for details, see the separate Setting Software Instructions, "EVENT SETTINGS" and "failure Pattern Settings.")



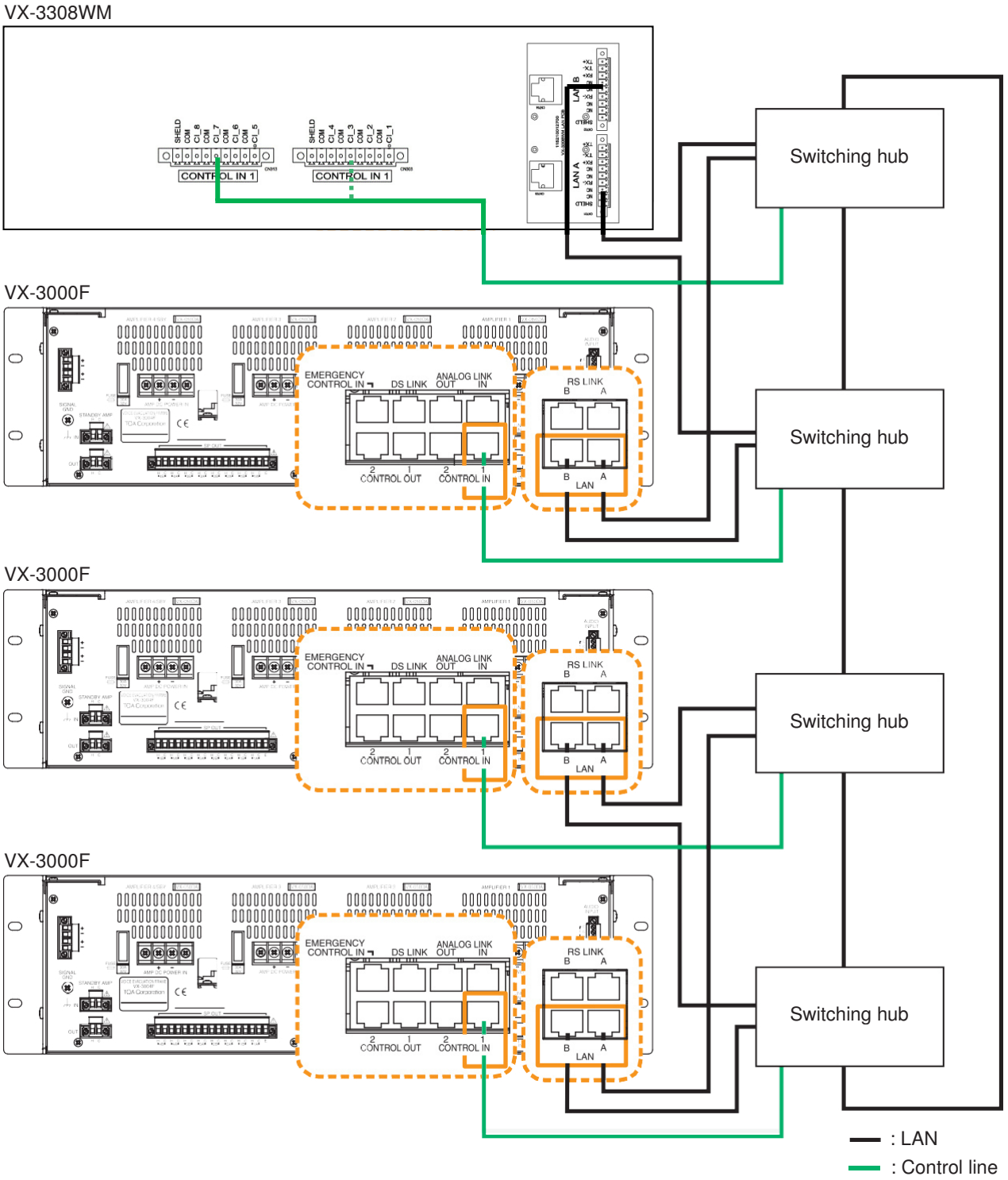
Note: Contact your TOA dealer for more information on switching hubs.

5.1.2. Redundant configuration of RSTP-compliant switching HUBs

In the connection example below, both LAN link A and B terminals of each unit are connected to the same switching HUB. By using switching HUBs with failure status output function, if any one of switching HUBs fails or the main line breaks, such a failure can be detected.

Notes

- Up to 7-level cascade is allowed for switching HUB connections.
- After connection completion, reactivate the VX-3000 by pressing the Reset key on its front panel.
- Perform spanning tree setting within switching HUBs. For the setting, contact your network administrator.
- The "External failure input" function needs be assigned to the unit's control input terminal to which the switching HUB's failure status output is connected. (for details, see the separate Setting Software Instructions, "EVENT SETTINGS" and "failure Pattern Settings.")

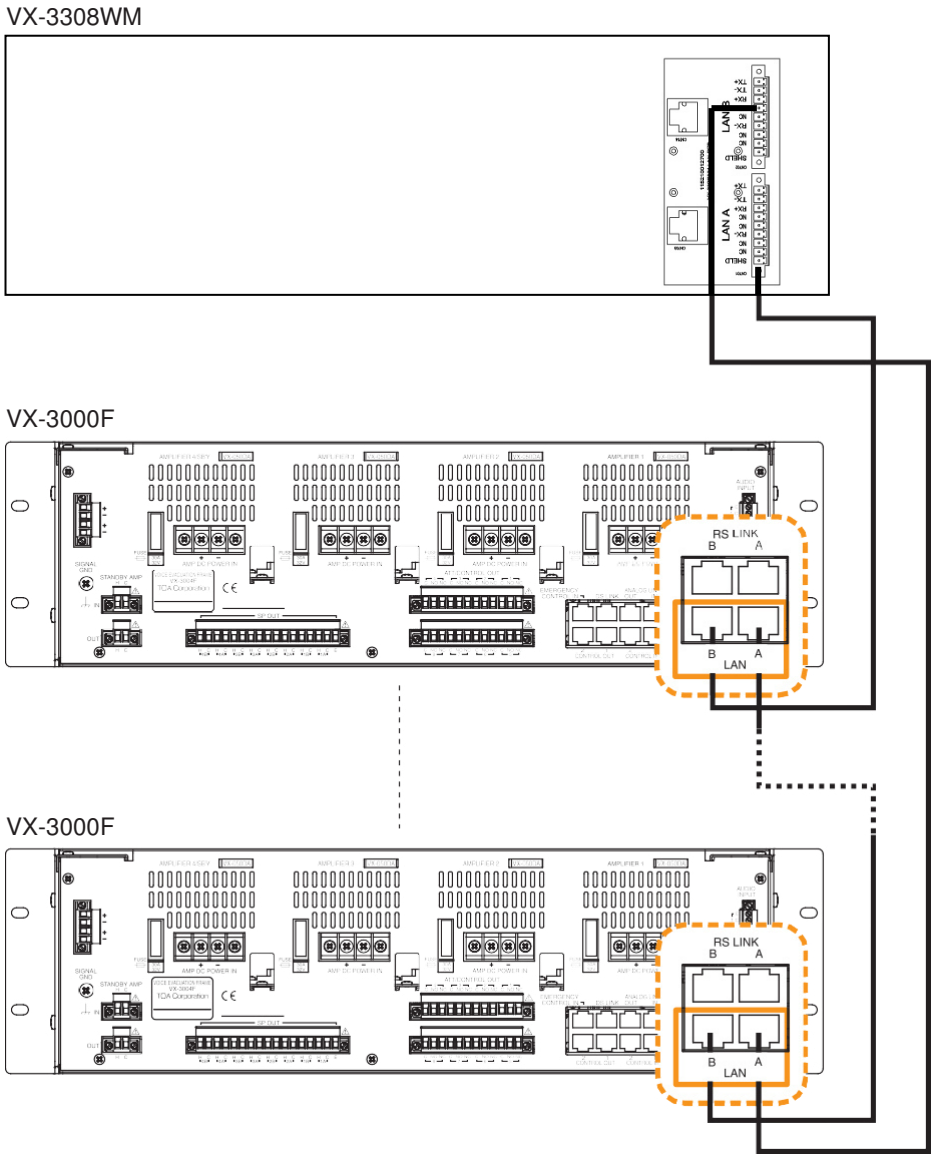


Note: contact your TOA dealer for more information on switching HUBs.

5.1.3. Redundant configuration when no switching HUBs are used

In the connection example below, both LAN link A and B terminals of each unit are connected to another VX-3000.

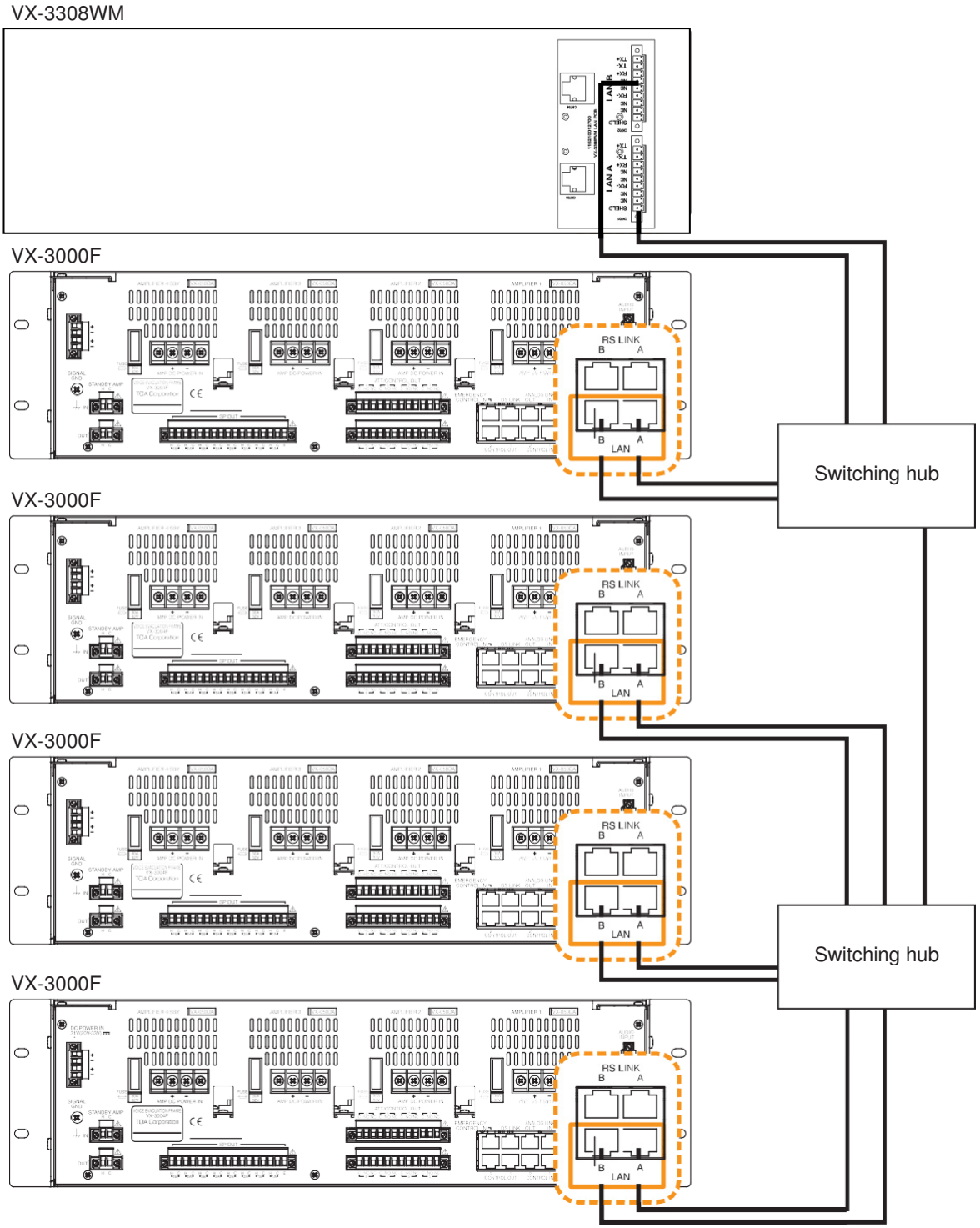
Notes
- Up to 7-level cascade is allowed for switching HUB connections.
- Up to 8 VX-3000s can be connected.
- After connection completion, reactivate the VX-3000 by pressing the Reset key on its front panel.



5.1.4. Non-redundant configuration of switching HUBs

In the connection example below, both LAN link A and B terminals of each unit are connected to the same switching HUB.

Notes
- Up to 7-level cascade is allowed for switching HUB connections.
- After connection completion, reactivate the VX-3000F by pressing the Reset key on its front panel.



Note: contact your TOA dealer for more information on switching HUBs.

STP Category 5 straight cable
(with RJ45 connectors)

6. SPEAKER LINE INITIAL SETTING

To perform Speaker line Surveillance, be sure to make the initial settings for the VX-3308WM as follows after connection completion of the VX-3000 system.

6.1. Setting Items

[Initial impedance value setting]

The VX-3000f determines whether the speaker line is open or Shorted using this initial value as reference value (normal impedance value).

Important
When using the Surveillance function, be sure to set the initial impedance value.

[Speaker line OPEN sensitivity adjustment]

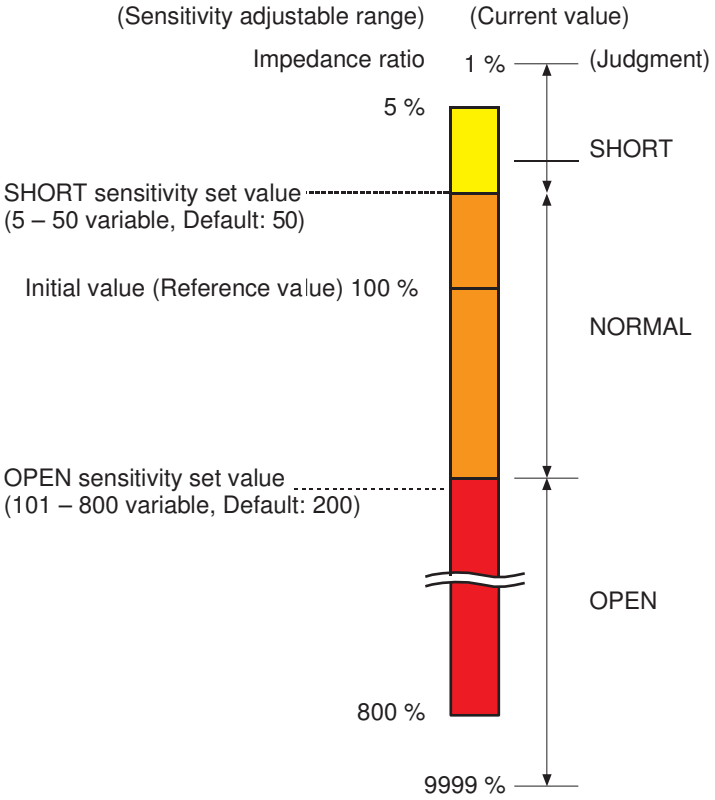
The sensitivity can be adjusted so that the VX-3308WM can judge the speaker line open on the basis of the initial value.

[Speaker line SHORT sensitivity adjustment]

The sensitivity can be adjusted so that the VX-3308WM can judge the speaker line Shorted on the basis of the initial value.

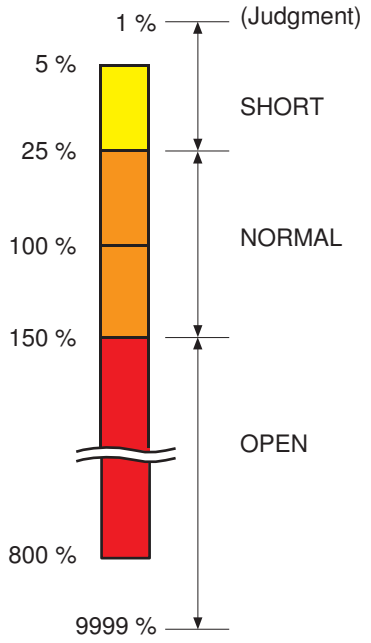
6.2. OPEN/SHORT Criterion by Comparing the Current Value with the Initial Value

The set sensitivity values and the current value are expressed as rations to the initial value (defined as100 %). If OPEN and SHORT sensitivities remain factory-preset, the speaker line is judged Shorted when the current value is less than half the initial value, and open when it is more than twice the initial value.



[Sensitivity setting example]

When the SHORT sensitivity is set to 25 %, and OPEN sensitivity to 150 %.

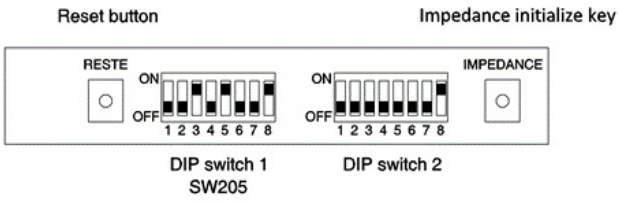


7. FAN REPLACEMENT

When a power failure appears and the corresponding log entry shows [charging fault], then the fan of the power supply might be defective. If so, it must be replaced by a new one.
Follow the steps below to replace the fan.

Step 1. Use the key to open the door.

Step 2. Put the 8th position of the DIP switch SW205 behind the door panel to the ON position(AC only mode), then turn off the power. When the power off ,put the 8th position of DIP switch SW205 to OFF position.



Step 2

Step 3. Unplug the fan power connector

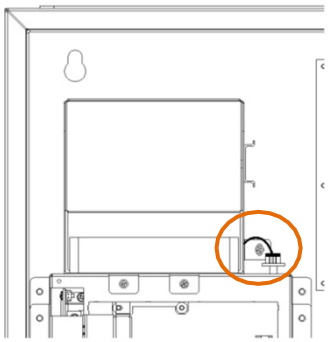
Step 4. Remove the 3 screws of the fan air guiding structure.

Step 5. Remove the fan air guiding structure.

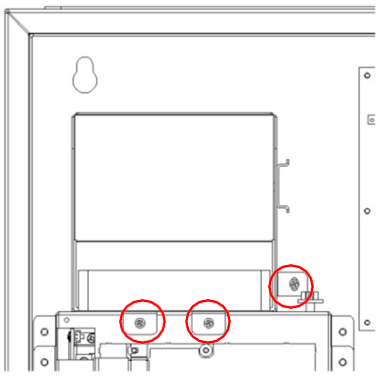
Step 6. Replace the fan.

Step 7. Install the fan air guiding structure.

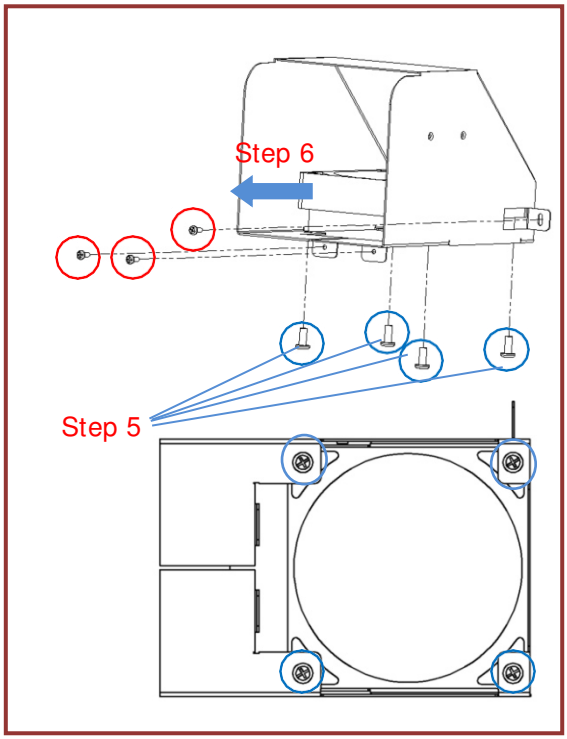
Step 8. Connect the fan socket and power on.



Step 3/8



Step 4/7



8. POWER CORD CONNECTIONS

> **⚠ WARNING** Before connecting the power cord, make sure that the power cord is not energized! Otherwise it can cause injury or death!

Power cord connection can be carried out after VX-3308WM and VX-3065 are installed onto the wall. The power cord must use AWG 18 copper wire (cross-sectional area 0.8mm^2) or copper wire with a larger cross-sectional area to ensure sufficient current-carrying capability.

1. Open the door of VX-3308WM and confirm whether the air switch is toggled to the “OFF” position.
2. Install the grommet onto the rightmost wire guide hole of VX-3308WM and let the power cord pass through the grommet.
3. Respectively strip the insulation layer of the live and neutral wires of the power cord by 15mm, and strip the insulation layer of the ground wire by 10mm.
4. Connect the ground wire (yellow-green wire) to the ground terminal. Use a screwdriver to press the ground terminal and insert the ground wire into the wiring hole. Loosen the screwdriver and gently pull the ground wire to ensure a secure connection.
5. Connect the live and neutral wires to the air switch and pay attention to positions of the live and neutral wires. It's strictly forbidden to transpose the live and neutral wires.
6. After the power cord is connected, tighten the grommet

9. APPENDIX: Recommendations to the Battery Installation

Incorrect installations of the batteries can cause unnecessary fault indications. This information sheet gives you helpful hints and recommendations to avoid it.

Please also take care on the battery handling hints.

Battery

Storage

The recommended storage conditions (duration, temperature) of charged and uncharged batteries must not be exceeded to avoid a total discharge that destroys the battery. Consider the storage times listed below:

1. storage in factory, distributor, dealer and own company
2. in the project, when the VA system is installed but not in use, respective not powered, so that the batteries will not be trickle charged´

The storage and discharge duration depend on the ambient temperatures and can be found in the battery data sheets. The maximum storage durations are:

Ambient temperature	Maximum time before re-charge
Less than 20°C	12 months
20°C – 30°C	9 months
20°C – 40°C	6 months

The production date is usually printed on the battery. In case you do not know the storage conditions of the dealer or distributor, then it is preferable consider the worst case.

Installation of the Batteries

Do not install the batteries in unvented rooms and cabinet racks. When putting the batteries on the bottom of the cabinet rack, then assemble minimum two height units (2 U) vented panels in front of them. The batteries may emit inflammable gas that may cause fire or an explosion (the sealed batteries have a safety vent).

Important: The installation place of the batteries must be vented!

The batteries can be put on the bottom and its sides but not upside down.

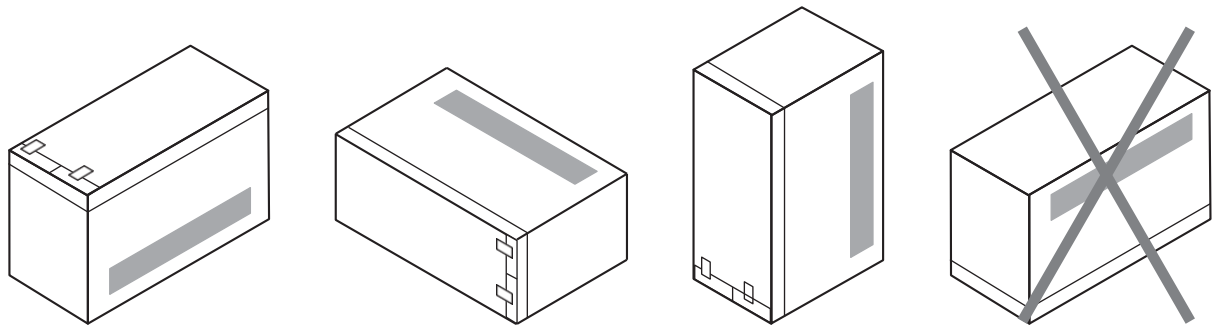


Figure 1: Permitted and forbidden installation positions of the battery

Fix the batteries with the hook-and-loop-tape provided with the VX-3308WM to avoid them to shift away.

Battery Connection

Clean Contacts

Take care that the connection terminals are clean before connecting the cables. Clean them if necessary.

Ensure that the battery cables are inserted correctly into the battery terminals of the VX-3308WM and the screws are fastened tight. Add one crown gear (toothed washer) on one side of the battery's terminal connection.

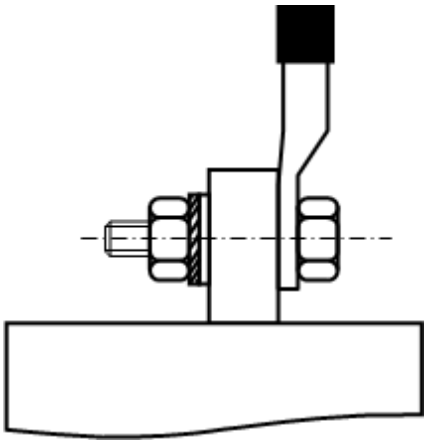


Figure 2: Connection to the battery terminal with a crown gear

Secure Battery Connection

When no AC-mains is connected to the VX-3308WM, then the batteries can be connected without sparks. Be careful when connecting the batteries to the VX-3308WM – the battery can easily provide some hundreds up to thousand amperes in case of a short circuit! This can destroy many devices easily. Connect the battery cables in the order described below. When disconnecting the batteries, then proceed in opposite order. Doing so will cause no damage of devices when accidently touching metal parts of the cabinet or device with the battery cables.

1. Connect the plus terminal of the battery to the VX-3308WM (check on correct polarity and fixation in the battery cable clamp at the VX-3308WM).
2. Connect the minus terminal of the battery with the plus terminal of the second battery.
3. Connect the minus terminal of the second battery to the VX-3308WM.

(Steps 1 and 2 can be proceeded in opposite order)

Hints on Preservation

Check the batteries on cleanliness and clean if necessary at every maintenance and inspection of the voice alarm system. Be careful using solvents! We recommend to read the instructions for the batteries carefully. Organic solvents must never be used!

Use of other batteries than the recommended models

When not using the certified batteries, then the following specifications shall be provided by another battery model:

- charging voltage of the full battery at 25°C: 13.65 V (±0.15 V) *
- temperature coefficient of the charging voltage: -20 mV/°C (-3.3 mV/°C per cell)
- internal resistance of the battery: < 0.01Ω

Temporary Shutdown of the Voice Evacuation Wall Mount

When shutting down the system longer than one month, then disconnect the batteries.

The part of Power supply

The VX-3308WM monitors the availability of the AC power and switches on the battery in case of a total loss of that power.

When the AC power is available, then the batteries will be charged. The charge current is monitored, and when it is below 2mA, then a charger fault will be entered into the log file of the system. The indications "BATTERY CONNECT" and "CHARGING" do not light.

The battery surveillance of the VX-3308WM measures the resistance of the battery circuit at the set intervals. A battery fault will be logged when this resistance is higher than the initial value set by the DIP switch (p. 2-4). The indication "BATTERY CONDITION" extinguishes. The battery test can be proceeded by pushing the button "BATTERY CHECK".

Temperature Sensor

Purpose and Characteristics

The temperature sensor measures the ambient temperature of the battery to control the charging voltage. When the voltage is too high, then the battery can produce gas that can cause the battery to break. The gas can leak through the pressure control valve and develop an explosive gas, therefore the cabinet rack and the room must be vented. The battery cannot be charged fully when the charging voltage is too low. When the current into the battery is less than 2mA, then a charger error will be logged and the “Charge” LED extinguishes.

The temperature sensor must not be disconnected during charging of the battery because then the charging voltage becomes high causing the dangerous situations explained above. When exchanging the temperature sensor, the charging voltage of the VX-3308WM must be re-adjusted by TOA dealer.

Trouble Shooting

The different faults described below are indicated on the front panel (Figure 4). Refer to the explanation below.

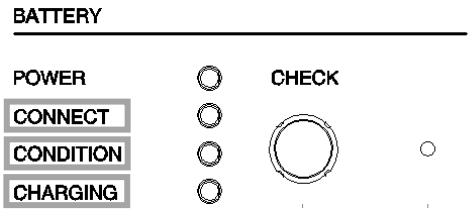


Figure 4: indications on VX -3308WM

Charger Fault

A charger fault occurred when the indications “Charging“ and “Battery Connect“ extinguish on the VX-3308WM.

Reason	Measures
Battery not connected or Charging circuit faulty	Check the battery connections. Clean the connectors or fix the connectors when necessary.
The temperature of the temperature sensor is higher than that of the battery or disconnected.	
The fuses at DC output terminals POWER OUT 19-33V MAX 30A” blown.	Check each fuse to find which one is blown. Then, replace the blown fuse with the supplied one. If the fuse blows again, consult your TOA dealer.
Internal fuse (15 A) of the VX-3308WM blown.	Consult your TOA dealer.
fan do not operate.	

Battery Fault

Reasons of a battery fault indication:

1. resistance increase at the contacts due to corrosion
2. the battery’s internal resistance is too high.

Determination of the resistance of the cable and connectors

Case 1 can be checked with a voltmeter (multi-meter) with a resolution of 1 mV. It is used for measuring the voltage losses of the cables and connections. The voltages are to be added, then sum to be divided by 5 to obtain the resistance.

Check procedure 1:

The measuring tool must be able to indicate the voltage quickly or must provide a peak-hold function because the current for the measurement is supplied for two (2) seconds only.

Measure of the voltage of each cable path after depressing the battery check button of the VX-3308WM. When A fuse vis in the path must be included in the measurement. Proceed one measurement per minute maximum.

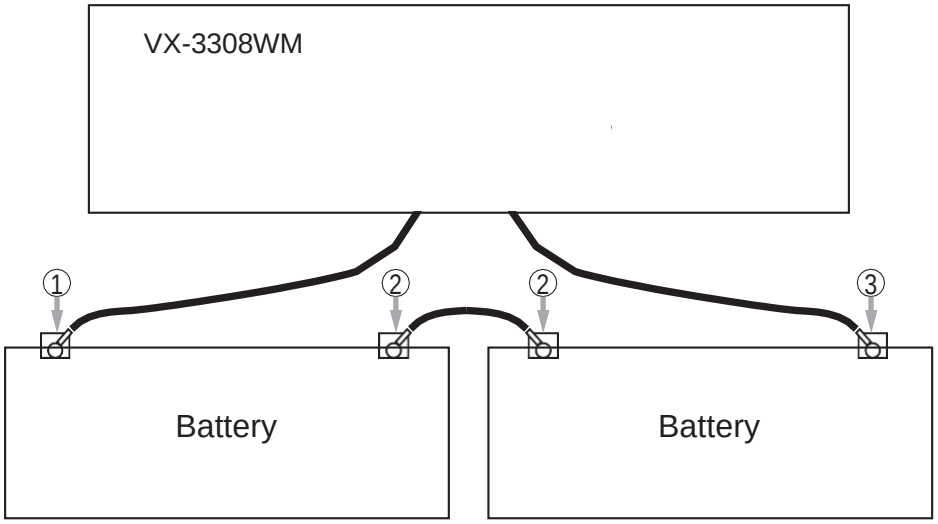
Check procedure 2:

This measurement can be done with a slow voltmeter.

Disconnect the VA unit's power supply from the DC output from the VX-3308WM and connect a load of 5 - 6 Ω / 600 W to the DC output (when the current of the connected system components is known), then take care that the total current is approximately 5 A. Do not measure a too long time to avoid reducing the battery's capacity too much.

Measure the voltage of each cable path while the load is connected.

Measuring Points



Touch the battery contacts and the screw tops of the battery connector of the VX-3308WM with the measuring tips as shown above.

Do not measure the voltage at the cable clamps, because in this case the contact resistance is excluded from the measurement.

Measure the voltage on each path (it may contain a fuse).

Add these voltages and divide by 5 (5 A current).
The result is the resistance. When it exceeds 0.004Ω , then check the contacts, clean them if necessary and tighten it. Alternative: max. voltage = 20mV.

Example:

Current I = 5 A, measured voltages: 1 : 120 mV, 2 : 10 mV, 3 : 50 mV
Total voltage: 180 mV = *0.18 V.* *R = 0.18 V/ 5 A = 0.036 Ω > 0.004 Ω*
The total resistance is too high. Since path 1-1 has a much higher resistance than path 3-3, its connection should be checked.

When the resistance is below 0.004 Ω, then the battery can be defective (too old).

Measuring the battery's internal resistance

There are special but expensive measuring tools for battery impedances. Usually when the battery's internal impedance is double than typical, then the battery should be exchanged.

Traceability Information for Europe

manufacturer:
TOA corporation
7-2-1, minatojima-Nakamachi, chuo-ku, Kobe, Hyogo, Japan

Authorized representative:
TOA Electronics Europe GmbH
Suederstrasse 282, 20537 Hamburg, Germany

url: http://www.toa.jp/

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