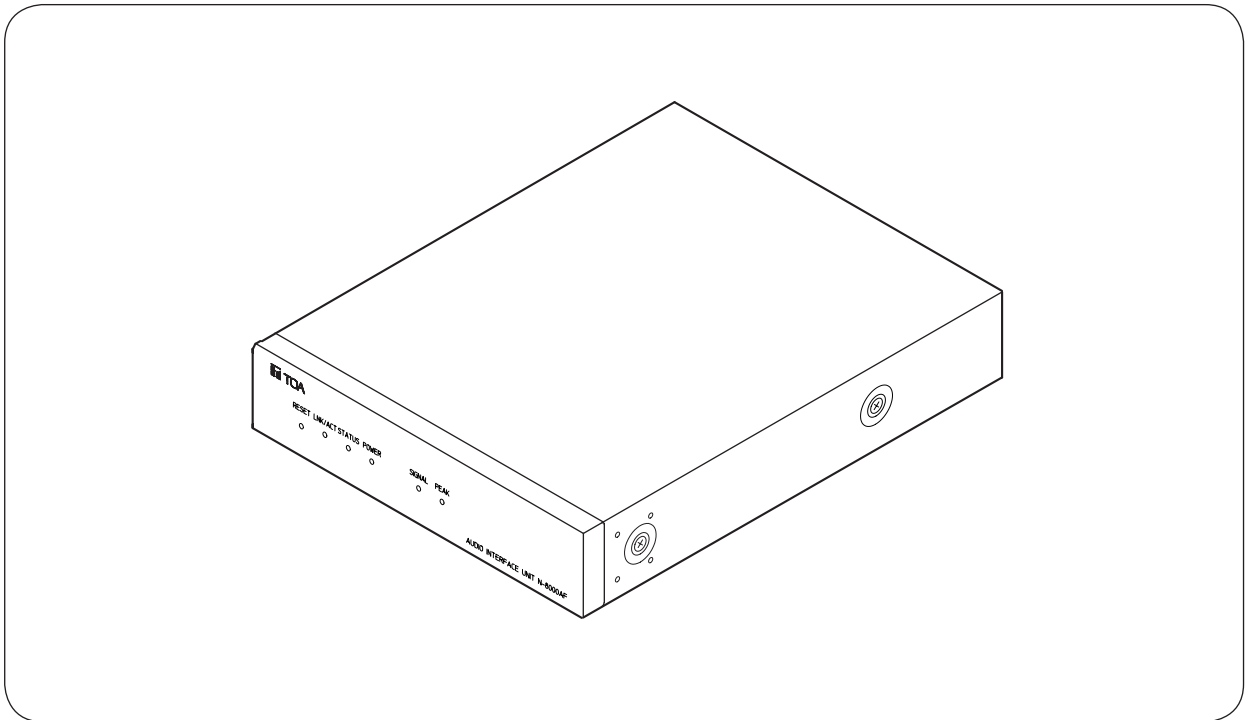




INSTALLATION MANUAL

AUDIO INTERFACE UNIT

N-8000AF



Thank you for purchasing TOA's Audio Interface Unit.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TOA Corporation

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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.

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.



CAUTION

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



WARNING

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.
- 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.
- 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.
- 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 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 power supply cord is damaged (exposure of the core, disconnection, etc.)
- 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. Refer all servicing to qualified service personnel.
- 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.
- Do not touch a plug during thunder and lightning, as this may result in electric shock.



CAUTION

When Installing the Unit

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.
- Be sure to follow the instructions below when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
- Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other arrangements to prevent it from falling down.

- When connecting the unit's power cord to an AC outlet, use the AC outlet with current capacity allowable to the unit.
- The supplied rack-mounting screws can be used for the TOA equipment rack only. Do not use them for other racks.

When the Unit is in Use


- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.
- Do not stand or sit on, nor hang down from the unit as this may cause it to fall down or drop, resulting in personal injury and/or property damage.


CONSEILS DE SÉCURITÉ

- Avant l'installation ou l'utilisation, lire attentivement l'ensemble des instructions de cette section pour un fonctionnement correct et sûr.
- Veiller à respecter les précautions recommandées dans cette section, laquelle contient des mises en garde et/ou précautions importantes en matière de sécurité.
- Après lecture, conserver ce manuel à portée de main pour consultation ultérieure.

Symboles de sécurité et conventions

Les symboles et messages de sécurité décrits ci-dessous sont utilisés dans cette notice pour prévenir tout dommage corporel ou matériel pouvant résulter d'une mauvaise utilisation. Lire attentivement cette notice pour comprendre parfaitement les symboles et messages de sécurité afin de prévenir tout risque éventuel.

 **AVERTISSEMENT** Indique une situation risquant d'entraîner des blessures graves, voire la mort, en cas de mauvaise manipulation.

 **ATTENTION** Indique une situation risquant d'entraîner des blessures moyennement graves ou mineures, et/ou des dommages matériels.

 **AVERTISSEMENT**

Lors de l'installation de l'appareil

- Ne pas exposer l'appareil à la pluie et le protéger de tout contact avec de l'eau ou d'autres liquides afin d'éviter un incendie ou une électrocution.
- Utilisez l'appareil uniquement avec la tension spécifiée sur le chargeur. L'utilisation d'une tension supérieure à celle spécifiée peut être à l'origine d'un incendie ou d'une électrocution.
- Ne pas couper, entortiller, modifier ou endommager le cordon d'alimentation. En outre, éviter d'utiliser le cordon d'alimentation à proximité d'un radiateur et ne jamais placer d'objets lourds (y compris l'appareil lui-même) sur le cordon d'alimentation, car ceci présente un risque d'incendie ou d'électrocution.
- Évitez d'installer ou de monter l'unité dans un endroit instable, tel qu'une table bancale ou une surface inclinée pour prévenir toute chute susceptible de provoquer une blessure corporelle et/ou une dégradation matérielle.

- Installer l'unité dans un endroit structurellement capable de soutenir le poids de l'appareil et de la patte de montage. L'appareil pourrait tomber et provoquer des blessures corporelles et/ou des dommages matériels.

Pendant l'utilisation de l'appareil

- En cas de survenue des irrégularités suivantes pendant l'utilisation, débrancher immédiatement la fiche du cordon d'alimentation de la prise secteur et contacter le représentant TOA le plus proche. Ne pas essayer pas d'utiliser l'appareil dans ces conditions sous peine de provoquer un incendie ou une électrocution.
 - Détection de fumée ou d'une odeur inhabituelle émanant de l'appareil.
 - Pénétration d'eau ou d'un objet métallique dans l'appareil
 - Dégradation du cordon d'alimentation (âme du câble dénudée, déconnexion etc.).
 - Dysfonctionnement (absence de tonalité).

- Pour empêcher un incendie ou une électrocution, ne jamais ouvrir ni ne retirer le boîtier de l'appareil, en raison de la présence de pièces à haute tension. La maintenance de l'appareil doit être confiée à un technicien après-vente qualifié.
- Ne pas insérer ni laisser tomber d'objets métalliques ou de matériaux inflammables dans les événements de ventilation du capot de l'appareil sous peine de provoquer un incendie ou une électrocution.
- Ne pas toucher la fiche du cordon d'alimentation pendant un orage - Risque d'électrocution.
- Respecter les instructions ci-dessous pour monter l'appareil en bâti. Risque d'incendie ou de blessure corporelle.
- Installer le bâti sur un sol stable. Le fixer à l'aide de boulons d'ancrage ou prendre des mesures pour empêcher qu'il ne chute.
- Pour brancher le cordon d'alimentation à une prise CA, vérifier l'intensité maximale de l'appareil.
- Les vis de montage en bâti fournies peuvent seulement être utilisées pour le bâti de l'équipement TOA. Ne pas les utiliser pour d'autres bâtis.



ATTENTION

Lors de l'installation de l'appareil

- Ne jamais brancher, ni débrancher la fiche du cordon d'alimentation avec les mains mouillées. Risque d'électrocution.
- Pour débrancher le cordon d'alimentation, veiller à le tenir par sa fiche ; ne jamais tirer directement le cordon. Utiliser l'appareil avec un cordon d'alimentation endommagé peut présenter un risque d'incendie ou d'électrocution.
- Ne pas placer d'objets lourds sur l'appareil sous peine de le faire tomber ou de le rompre, ce qui présente un risque de blessures corporelles et/ou de dommages matériels. Par ailleurs, l'objet lui-même peut tomber et provoquer des blessures et/ou dégâts.
- Ne pas placer d'objets lourds sur l'appareil sous peine de le faire tomber, ce qui présente un risque de blessures corporelles et/ou de dommages matériels.

2. GENERAL DESCRIPTION

TOA's N-8000AF is Audio interface unit used for the N-8000 Series Packet Intercom System (IP network compatible intercom) employing packet audio technology*.

It has an analog audio input and output, a time synchronization contact input, and each 8 contact inputs and outputs.

Connecting the unit to the LAN permits recording of conversations, chime broadcast at regular intervals (time signal) and paging broadcast to be realized.

* Technology related to audio transmission over a network.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

DESCRIPTION GÉNÉRALE

L'unité N-8000AF de TOA est l'interface audio utilisée pour le système de paquet intercom des séries N-8000 (intercom compatible avec un réseau IP) utilisant une technologie de paquet audio*.

Elle est dotée d'une entrée et d'une sortie audio analogiques, d'une entrée de contact de synchronisation ainsi que d'entrées et de sorties chacune à 8 contacts.

Le raccordement de l'unité à un LAN permet d'enregistrer des conversations, de diffuser une sonnerie à intervalles réguliers (signal horaire) et d'envoyer une notification.

* Technologie de transmission audio sur un réseau.

Avertissement

Cet équipement est un produit de classe A. En environnement domestique, ce produit peut provoquer des interférences radio.

3. FEATURES

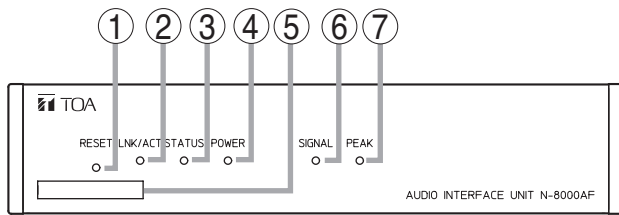
- Exchanges, IP stations and various kinds of interface units can be distributed over a data communications network.
- Can be connected to an existing local area network (LAN) or wide-area network (WAN).
- The dedicated software program enables centralized control with a personal computer.
- System maintenance (verifying operation log and Line supervision) can also be performed with a personal computer and Internet browser.
- The unit can interlock with an electronic lock system or CCTV surveillance system by way of contact input/output control function.

CARACTÉRISTIQUES

- Un réseau de communication de données permet la connexion de centraux, de stations IP et de différents types d'interfaces.
- Peut être connecté à un réseau local (LAN) ou étendu (WAN) existant.
- Logiciel dédié permettant un contrôle centralisé à partir d'un PC.
- La maintenance du système (vérification du journal d'opérations et supervision des lignes) peut aussi intervenir via un ordinateur personnel et un navigateur Internet.
- Il est possible d'assurer une interface entre l'unité et un système de verrouillage électronique ou un système de caméra de surveillance via la fonction de contrôle de l'entrée/sortie de contact.

4. NOMENCLATURE AND FUNCTIONS

[Front]



1. Reset key [RESET]

Pressing this key reactivates this unit.

2. LNK/ACT indicator [LNK/ACT] (Green)

Lights when connected to a network, and flashes while transmitting or receiving data.

3. Status indicator [STATUS] (Red)

Continuously lights while data is written to an internal storage medium (FlashMemory). Flashes if there is a failure.

4. Power indicator [POWER] (Green)

Lights when power is supplied to the unit.

5. MAC address

This is the address*¹ used by the unit. Since the relationship of each exchange location to its MAC address is established when setting the network attributes, keep track of this relationship for later use.

*¹ The inherent address assigned to each network component, expressed in 12-digit hexadecimal notation.

6. Signal indicator [SIGNAL] (Green)

Lights when audio is input.

7. Peak indicator [PEAK] (Red)

Lights when over-input is applied to the audio input.

8. Cord clamp

Pass the power cord through this clamp to ensure that the plug does not pull out when the unit is mounted to a wall. (Refer to p. 11.)

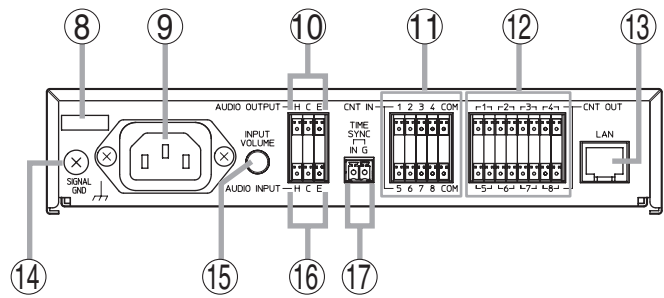
9. AC inlet

Connect the supplied power cord.

Note

If there is a danger of lightning strikes, insert an appropriate surge arrester into the power line.

[Rear]



10. Audio output terminal [AUDIO OUTPUT]

This terminal connects to a recording device, etc. (Refer to p. 14.)

Max. 0 dB*², 600 Ω or less, balanced

11. Contact input terminals [CNT IN]

No-voltage make contact inputs.

Short-circuit current: under 5 mA, Open-circuit voltage: 24 V

Connect using a removable terminal plug.

(Refer to p. 14.)

12. Contact output terminals [CNT OUT]

Relay contact outputs.

Withstand voltage: 24 V DC, Control current: 2 – 500 mA

Connect using a removable terminal plug.

(Refer to p. 14.)

13. Network connection terminal [10/100M]

Connects to a 10BASE-T- or 100BASE-TX-compatible network. (Ethernet RJ-45 jack)

14. Functional earth terminal [SIGNAL GND]

Ground this terminal.

Note: This terminal is not for protective earth.

15. Input volume control [INPUT VOLUME]

Adjusts the input signal level. Use this volume control to adjust the signal level to below the point where the Peak Signal Indicator begins to light.

16. Audio input terminal [AUDIO INPUT]

Connect the microphone or other sound source equipment to this terminal.

(Refer to p. 14.)

Max. 0 dB*², 2 kΩ or more, balanced

17. Time sync input terminal [TIME SYNC]

Connect the Program Timer, etc. to this terminal.

Use the removable terminal plug for connection of this terminal.

(Refer to p. 14.)

*² 0 dB = 1 V

5. INSTALLATION

The N-8000AF can be installed in any of three ways: Equipment rack mounting, Desk-top installation, and Wall mounting.

5.1. Equipment Rack Mounting

- A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
 - B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
 - C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
 - D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
 - E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."
- A) Température ambiante élevée - si l'appareil est installé dans un bâti fermé ou en même temps que d'autres appareils, la température à l'intérieur risque de devenir supérieure à la température ambiante. Par conséquent, veiller à installer l'équipement dans un environnement compatible à la température ambiante maximum spécifiée par le fabricant.
 - B) Débit d'air réduit - L'installation de l'équipement en bâti ne doit pas compromettre le débit d'air nécessaire à une utilisation sûre de l'équipement.
 - C) Charge mécanique - Le montage de l'équipement en bâti ne doit pas entraîner de danger dû à une surcharge mécanique inégale.
 - D) Surcharge du circuit - rester vigilant lors de la connexion de l'équipement au circuit d'alimentation et aux conséquences d'une surcharge des circuits sur la protection contre les surintensités et les câbles d'alimentation. Tenir compte des indications de la plaque nominale de l'appareil.
 - E) Veiller à toujours garantir l'intégrité de la prise de mise à la terre. Faire particulièrement attention aux connexions d'alimentation en dehors des branchements directs au circuit de dérivation (par exemple à l'aide de multiprises).

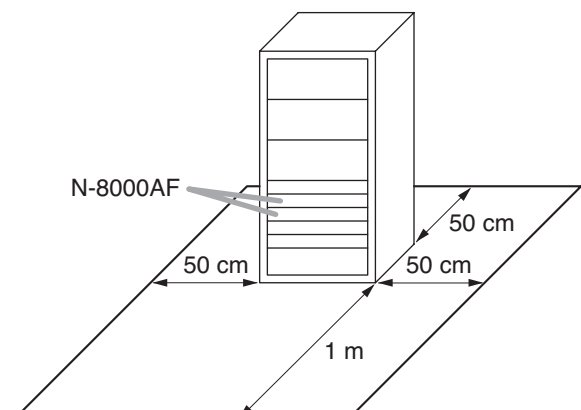
The N-8000AF can be mounted on the CR-273 or CR-413 or standard EIA 19" Equipment rack.
For the CR-273 and CR-413 Equipment rack assembly, read the installation manual supplied with the rack.

Note

When installing the N-8000AF, lay the equipment rack down face-up to do installation work safely.

5.1.1. Setting space

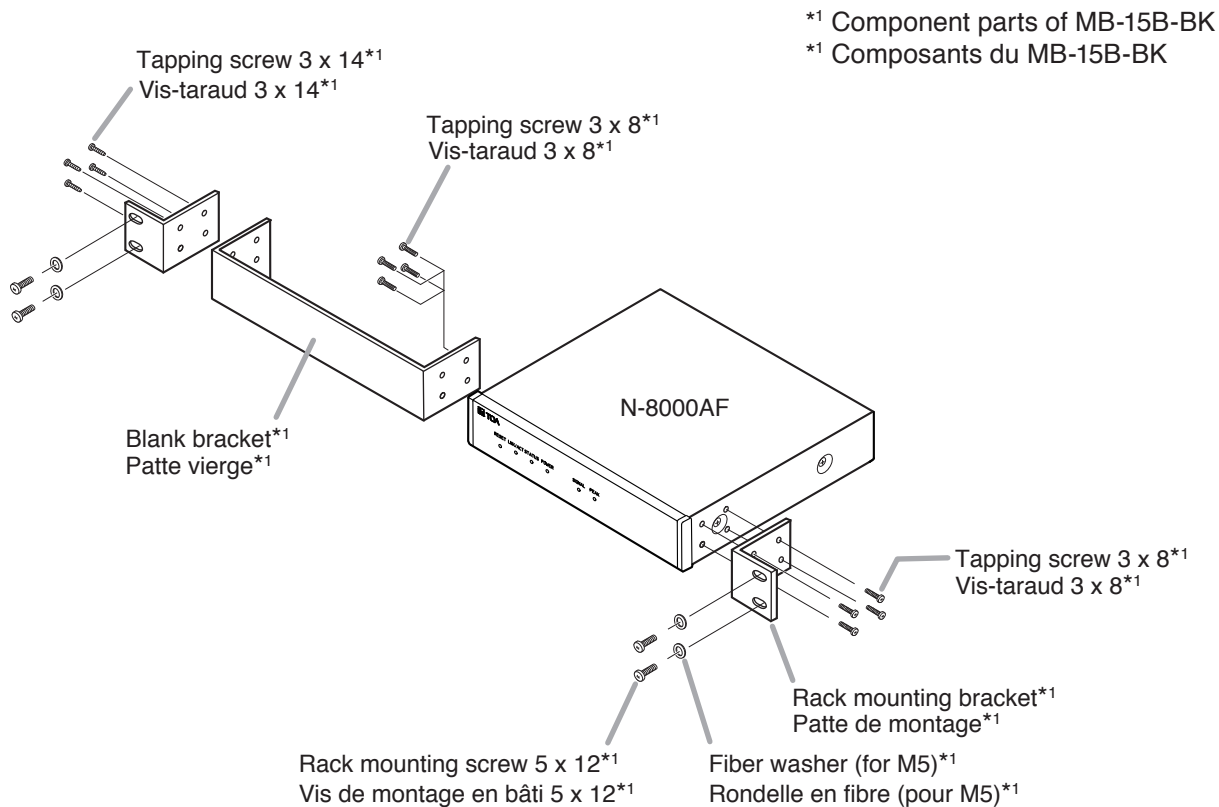
For maintenance works, allow much space between the wall and Equipment rack.



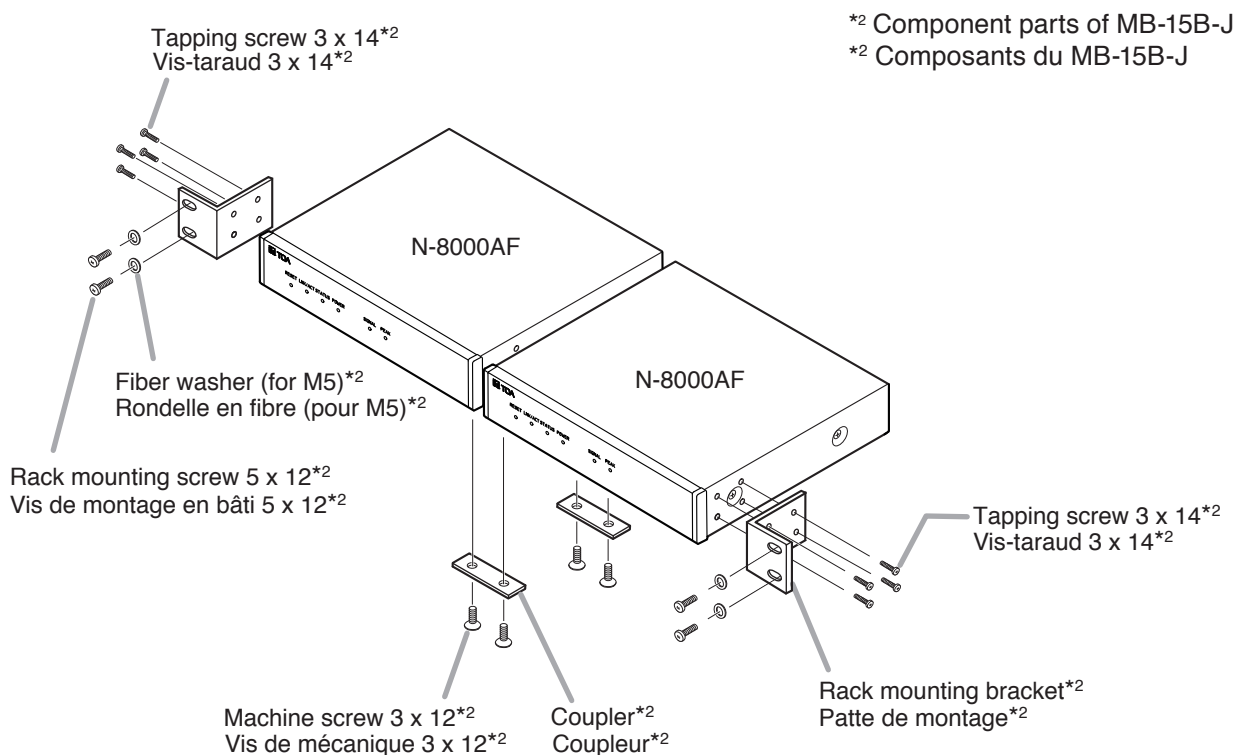
5.1.2. Mounting on the rack Montage en bâti

Use the optional mounting hardware set when installing the unit in an equipment rack.
Utilisez le matériel de montage en option pour installer l'unité en bâti.

- Use the optional **MB-15B-BK hardware set** when mounting a single unit.
- Utilisez le matériel **MB-15B-BK** en option pour le montage d'une seule unité.



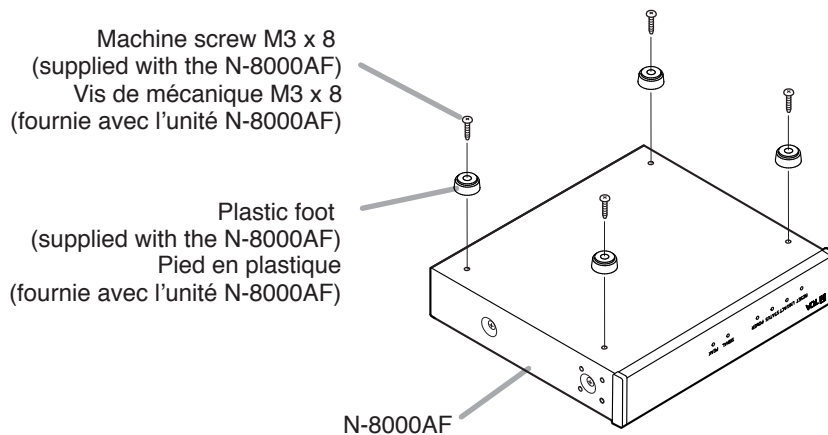
- Use the optional **MB-15B-J hardware set** when mounting 2 units.
- Utilisez le matériel **MB-15B-J** en option pour le montage de 2 unités.



5.2. Desk-Top Installation Installation sur un bureau

When installing the N-8000AF on a desk, secure the supplied plastic feet to the unit's bottom using the supplied machine screws.

Pour installer l'unité N-8000AF sur un bureau, installez les pieds en plastique fournis sur le fond de l'appareil à l'aide des vis fournies.

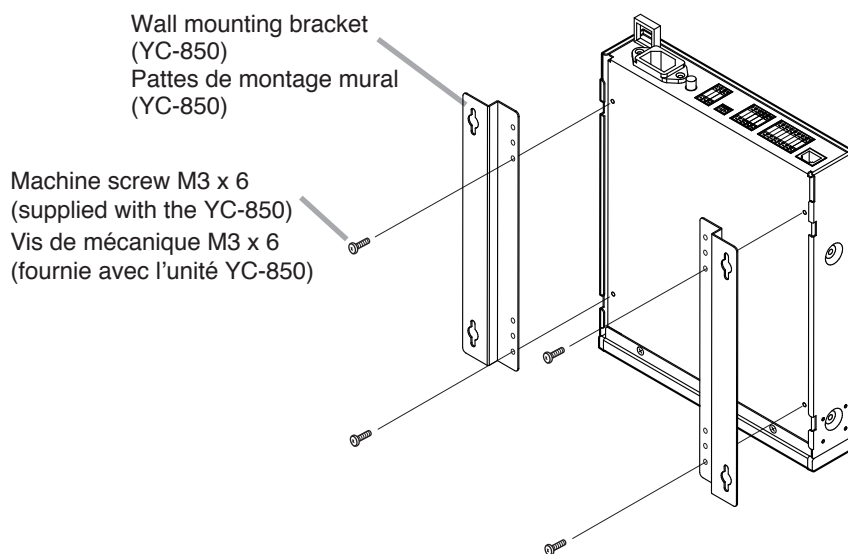


5.3. Wall Mounting Montage mural

The N-8000AF can be mounted on a wall using an optional YC-850 Wall-mounting bracket.
L'unité N-8000AF peut être montée au mur à l'aide d'une patte de montage mural YC-850.

Step 1. Install the YC-850 to the N-8000AF.

Étape 1. Installez l'unité YC-850 sur l'unité N-8000AF.



Step 2. Mount the N-8000AF on the wall.

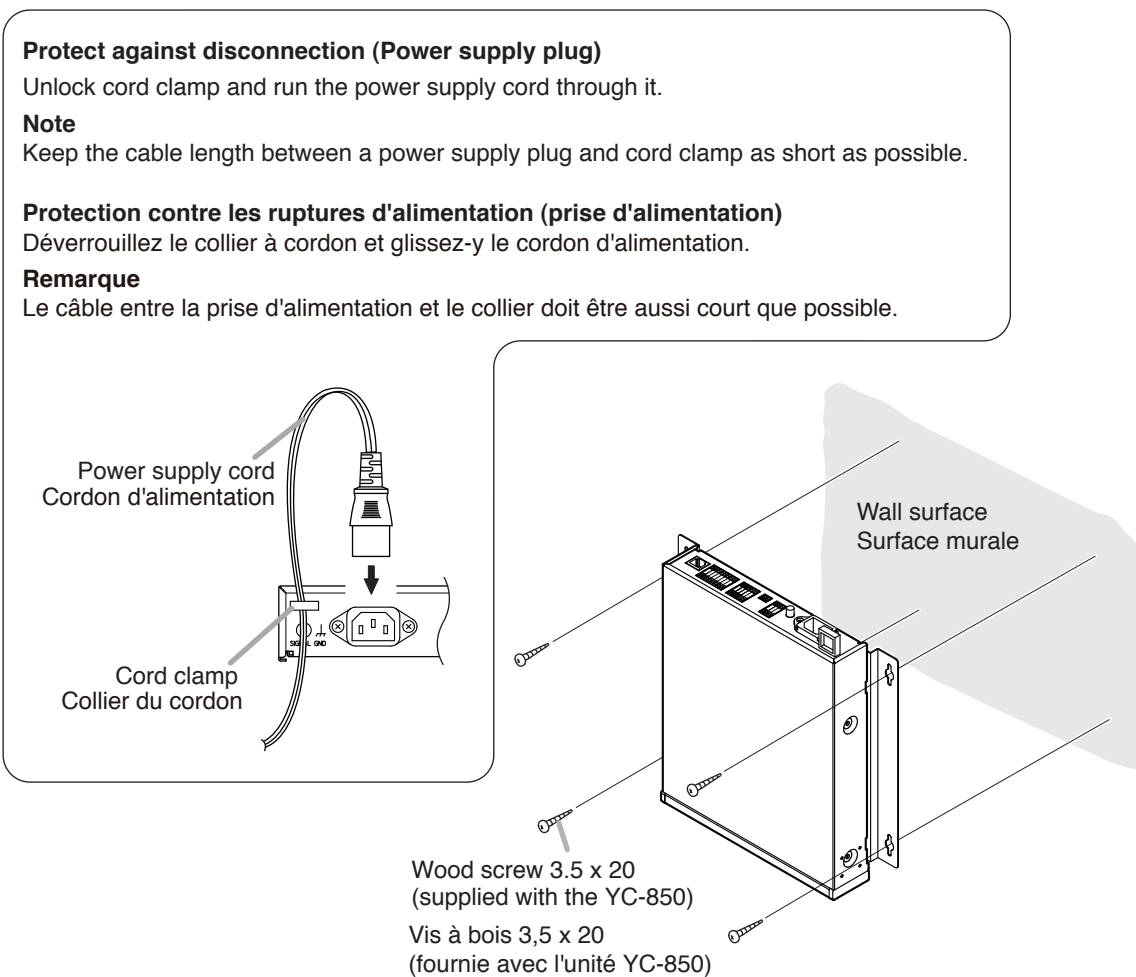
Notes

- Use appropriate screws for the construction of wall.
- Wood screws 3.5 x 20 are supplied with the YC-850.
- The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.

Étape 2. Montez l'unité N-8000AF au mur.

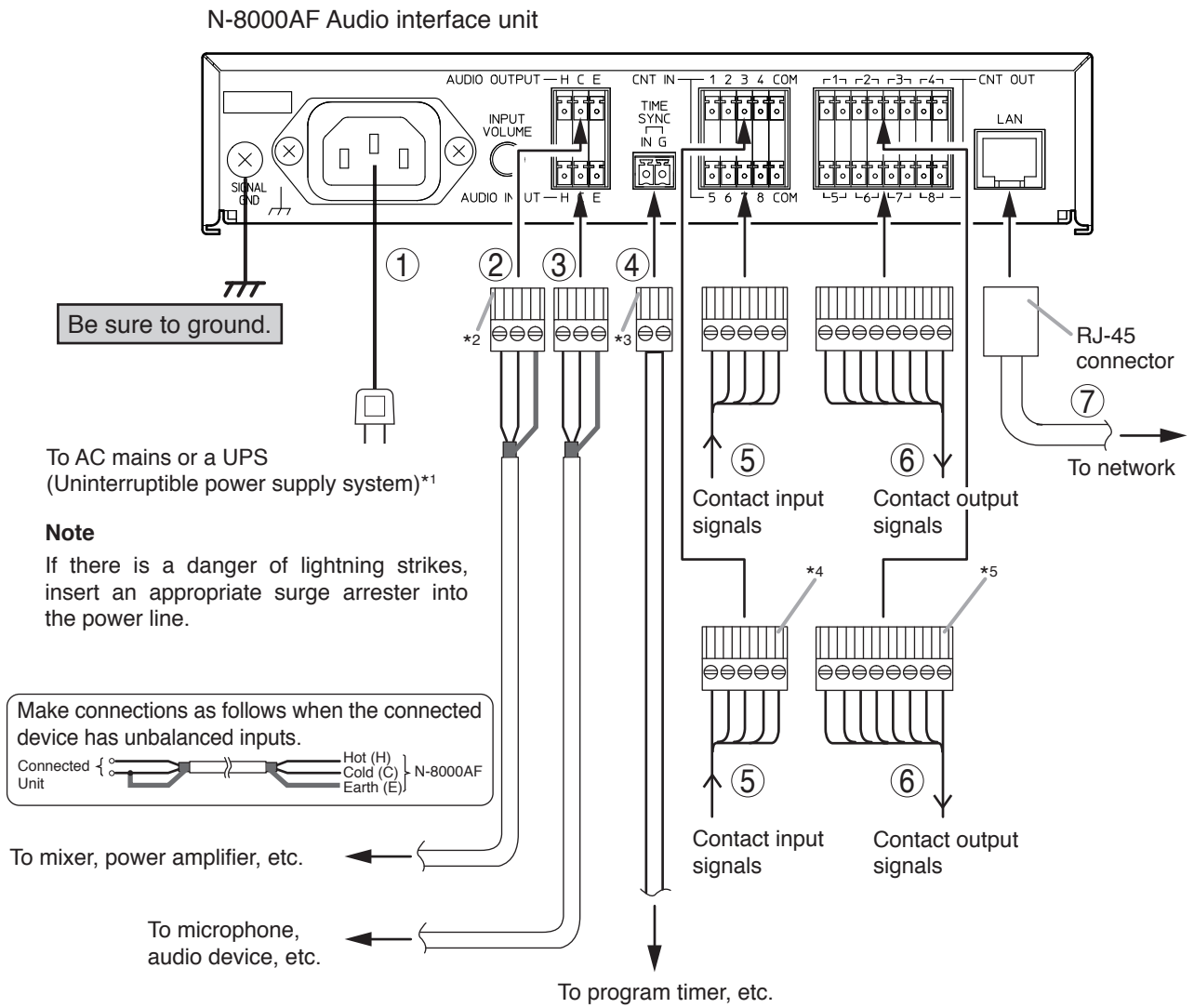
Remarques

- Utilisez des vis adaptées à la structure du mur.
- L'unité YC-850 est livrée avec des vis à bois 3,5 x 20.
- La prise doit être installée à proximité de l'équipement et la fiche (dispositif de déconnexion) doit être facilement accessible.



6. WIRING

6.1. Connection Diagram



- *1 Select an appropriate UPS taking into consideration the total power consumption of all system components and the required back up time, and also the requirement that the UPS should employ the on-line power system.
- *2 3P removable terminal plug (supplied with the N-8000AF)
- *3 2P removable terminal plug (supplied with the N-8000AF)
- *4 5P removable terminal plug (supplied with the N-8000AF)
- *5 8P removable terminal plug (supplied with the N-8000AF)

[General description of connection]

For cables, refer to p. 14.

1. Power supply connection

Connect the supplied power supply cord to AC Mains or a UPS (Uninterruptible power supply).

About power supply cord handling

The supplied power supply cord is designed for exclusive use with the N-8000AF. Use the supplied power supply cord only with the N-8000AF.

2. Audio output terminal connection

Connect the mixer, power amplifier, etc. to this terminal using the two-core shielded cable.

[Audio output terminal specifications]

0 dB*6, 600 Ω, balanced.

This terminal outputs line level audio signal.

H: Hot
C: Cold
E: Earth

*6 0 dB = 1 V

3. Audio input terminal connection

Connect the microphone, audio device, etc. to this terminal using the two-core shielded cable.

[Audio input terminal specifications]

– 58 to 0 dB*, 2 kΩ, balanced.

This terminal inputs microphone level or line level audio signals.

Use software to switch signal levels between microphone and line.

H: Hot

C: Cold

E: Earth

4. Time sync input terminal connections

Connect the program timer, etc. to this terminal.

(Refer to p. 14, "Removable terminal plug connection.")

[Specification of no-voltage make contact input]

Short-circuit current: 5 mA

Open-circuit voltage: 24 V

5. Contact input terminal connection

(Refer to p. 14, "Removable terminal plug connection.")

[Specification of no-voltage make contact input]

Short-circuit current: 5 mA

Open-circuit voltage: 24 V

6. Contact output terminal connection

Contact output terminals have no polarity.

(Refer to p. 14, "Removable terminal plug connection.")

[Specification of relay contact output]

Withstand voltage: 24 V DC

Control current: 2 mA – 500 mA

7. Network connection

Can be connected to a network of 10BASE-T/100BASE-TX in auto-sensing.

Use a straight through cable of UTP category 5 or more for this connection.

* 0 dB = 1 V

Reference

Audio interface unit: 7 W (rated) for CE version, 7 W (rated) for CU version

8-Port 10M/100M Switching Hub: 10 W (Differs depending on products.)

Note

Please keep the terminal plug of the attachment not used importantly in preparation for increasing the system.

6.2. Type of Cable

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

- UTP category 5 Straight through cables with RJ45 connector are to be used for connecting to IP network.
- The number of cables pairs laid should be determined considering the possibility of future expansion of the system.
- Outdoor wires should be used where wiring passes through inaccessible areas such as ceilings or under floors where the maintenance is not performed. Indoor wires may also be used, however, in case where there is no risk of deterioration due to exposure to heat, etc.

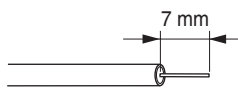
Note

Specifications related to junction are as follows.

Removable terminal plug (N-8000AF Control I/O and Audio I/O and Time sync input terminal)
Conductor diameter: \varnothing 0.5 – 2 mm (AWG12 – 24), Solid wire/Stranded wire

6.3. Removable terminal plug connection

Step 1. Strip a cable jacket of approx. 7 mm to expose inner cable.



For cables, refer to "Type of Cable" above.

Note

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

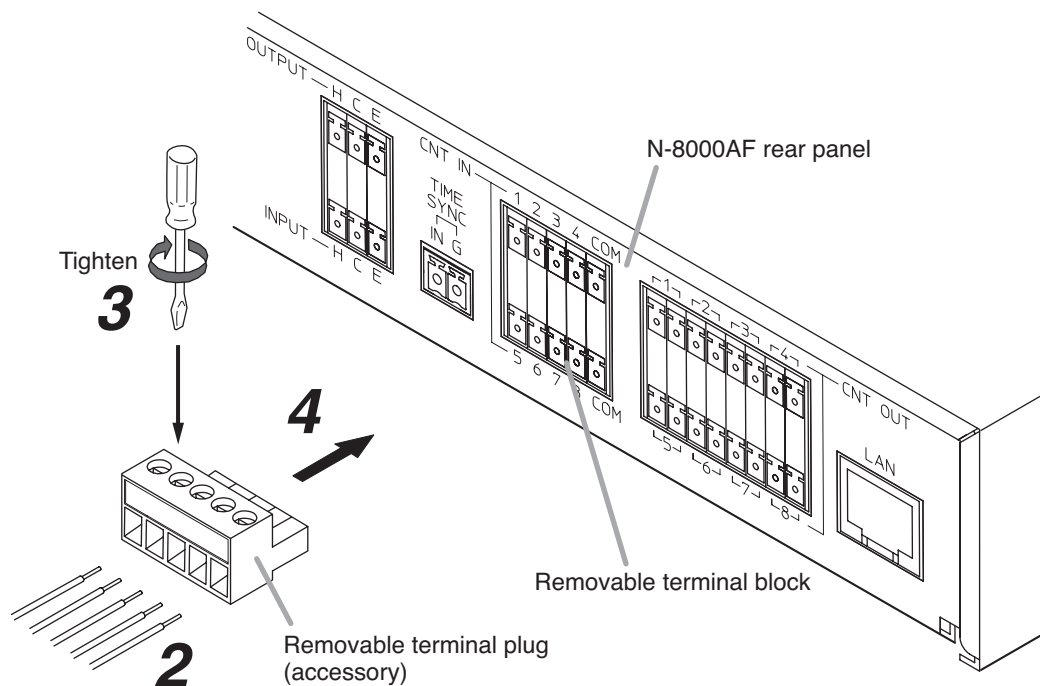
Step 2. Loosen the terminal screws and insert the cables.

Step 3. Tighten the terminal screws securely.

Notes

- Tug lightly on the cable to be sure that it does not pull free. If the cable pulls free, loosen the terminal screw again and reconnect from **Step 2**.
- Use the screwdriver appropriate to the screws tightened into the terminal plug.

Step 4. Insert the wired terminal plug into the terminal block of the N-8000AF.



7. ACCESSORIES

AC power cord (2 m)	1	Removable terminal plug (5 pins)	2
CD* (for PC setting, maintenance use)	1	Removable terminal plug (8 pins)	2
Removable terminal plug (2 pins)	1	Plastic foot	4
Removable terminal plug (3 pins)	2	Machine screw M3 x 8	4

* Contains the N-8000 setting software program and the N-8000 series instruction manual. The Setup Launcher is automatically started when the supplied CD-ROM is inserted into the PC's drive.

Note

If your PC's CD drive is not compatible with the AutoRun function, the setup guide is not automatically started even when the CD is inserted. Use either "Explorer" or "My Computer" to execute the following files, or use [Start → Run] in the Task Bar and enter the following command.

<Drive where CD is placed> \index.html

For example, when placing the CD in the "d" drive, → d:\index.html

8. OPTIONAL PRODUCTS

Rack mounting bracket: MB-15B-BK (for rack mounting one N-8000AF unit)
MB-15B-J (for rack mounting two N-8000AF units)

Wall mounting bracket: YC-850

Version update information

- Download our TOA Products Data, web site (<http://www.toa-products.com/international/>) to get the up-to-date version for N-8000 software, firmware, and Instruction manuals.
- The software version number can be confirmed using the Help menu.
- The current firmware version can be confirmed on the system management screen displayed when the browser establishes the connection to the Exchange.
- The instruction manual version number can be confirmed by checking the preparation date (month and year) shown at the lower right corner of the last page.
Example: Prepared in November 2004: 200411

Traceability Information for Europe

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