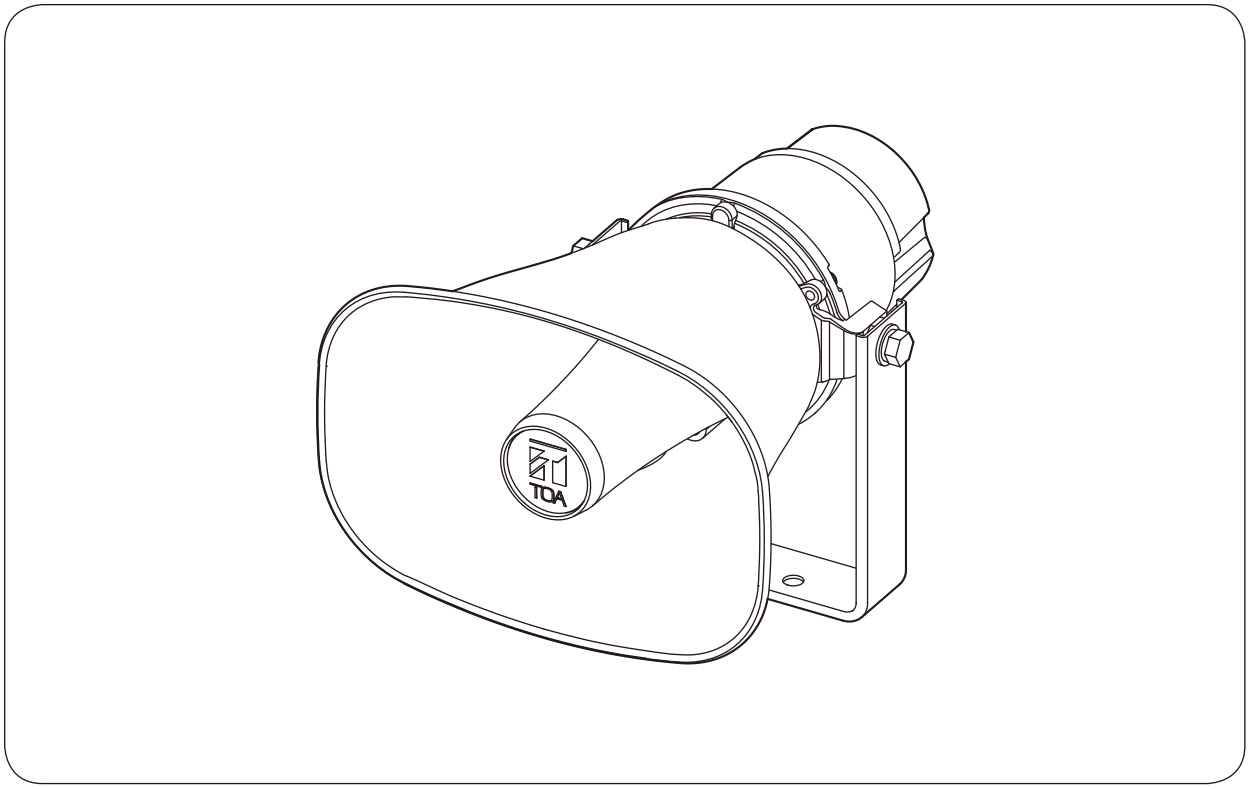
TOA

INSTRUCTION MANUAL

IP HORN SPEAKER IP-A1SC15



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

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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

- 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 installing the unit in the snowy area, take appropriate measures to prevent snow from lying on the unit. If the snow lies on the unit, the unit may fall, causing personal injuries.
- Do not use other methods than specified to mount the bracket. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.
- Attach the safety wire to the unit. If not attached, the unit could fall off, resulting in personal injury.
- Use nuts and bolts that are appropriate for the ceiling's or wall's structure and composition. Failure to do so may cause the speaker to fall, resulting in material damage and possible personal injury.
- Tighten each nut and bolt securely. Ensure that the bracket has no loose joints after installation to prevent accidents that could result in personal injury.
- Use the specified mounting bracket in combination. Doing otherwise may cause the unit or component to fall off, resulting in personal injury.
- Do not mount the unit in locations exposed to constant vibration. The mounting bracket can be damaged by excessive vibration, potentially causing the unit to fall, which could result in personal injury.
- Do not use anti-rust lubricant. If it contacts resin or rubber parts, they could deteriorate and cause the unit to fall, possibly resulting in personal injury.

When the Unit is in Use

- Should the following irregularity be found during use, immediately cut off the power supply from a PoE+ or PoE switching hub 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 the LAN cable 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 touch the unit and LAN cable during thunder and lightning, as this may result in electric shock.
- To prevent the electromagnetic wave interference from badly influencing medical equipment, make sure to switch off the unit's power when placing it in close proximity to the medical equipment.

⚠ CAUTION

- 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.
- Avoid touching the unit's sharp metal edge to prevent injury.
- 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.
- Have the unit checked periodically by the dealer 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.



The IP-A1SC15 IP horn speaker is capable of delivering extremely high volume sound output. Therefore, close proximity to the speaker over time could present the danger of hearing impairment. Be sure to follow the instructions below when conducting performance tests:

- Turn down the sound volume before adjusting the volume.
- Do not position one's ear close to the unit.
- Point the unit in a direction where no people are present.
- Avoid listening to high-volume output for prolonged periods of time.

FCC REQUIREMENTS

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications

Any modifications made to this device that are not approved by TOA Corporation may void the authority granted to the user by the FCC to operate this equipment.

WARNING: Operation of this equipment in residential areas could cause radio interference.

This equipment is not suitable for use in locations where children may be present.

2. SUMMARY AND FEATURES

The IP-A1SC15 IP horn speaker is equipped with a built-in power amplifier and sound source memory. It can be connected to and used over a local network.

- Power may be supplied by way of PoE+ or PoE switching hubs.
- Full compatibility with international IP66 waterproof enclosure standards ensures that the unit can be used in a wider range of temperatures and weather conditions, realizing excellent environmental performance.
- The IP horn speaker is compatible with the following broadcasting modes:

Internal sound source broadcasting mode	Enables broadcast of up to 20 internal sound source files by means of contact control or Remote API (HTTP).
VMS broadcasting mode	Enables backchannel audio broadcast from the VMS (Video management system) software using the common protocol for IP cameras.
SIP broadcasting mode	Enables SIP broadcasts from any voice communications device that utilizes the SIP protocol, such as SIP or IP telephone (IP-PBX) systems.
Multicast broadcasting mode	Allows up to 10 multicast ports to be set up, for 10 paging groups.

- Orders of priority can be set among the various broadcasting modes, meaning higher priority broadcasts can interrupt and override lower priority broadcasts.
- Since the unit is equipped with individual offset adjustable volumes for each broadcasting modes and patterns (internal sound source), actual broadcasting volume can be normalized or optimized.
- Broadcasts can be controlled using Remote API or contact inputs from connected external equipment.
- Connected external equipment can be controlled by contact outputs in synchronization with speaker broadcasts.

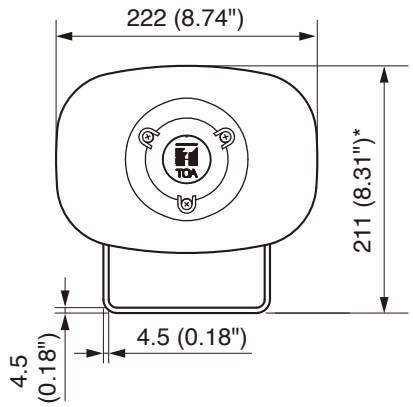
3. ABOUT SECURITY MEASURES

- Ensure that sufficient security measures are taken on the customer's own responsibility.
- TOA Corporation takes no responsibility for damage or loss caused by security-related problems, such as illegal access.
- To help prevent illegal access to the unit, be sure to change the user ID and password from those used for initial setup. For setting methods and other details, please refer to the separate setup manual which can be downloaded from the TOA DATA Library (https://www.toa-products.com/international/).
- Take utmost care in the management of the unit's communications password.

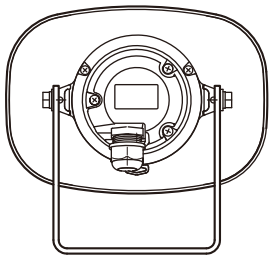
4. DIMENSIONAL DRAWINGS

Unit: mm

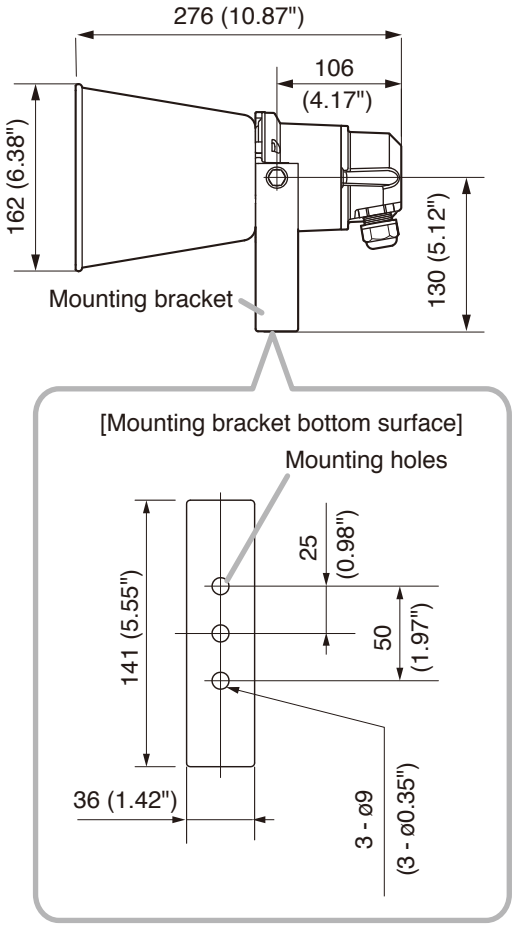
[Front]



[Rear]



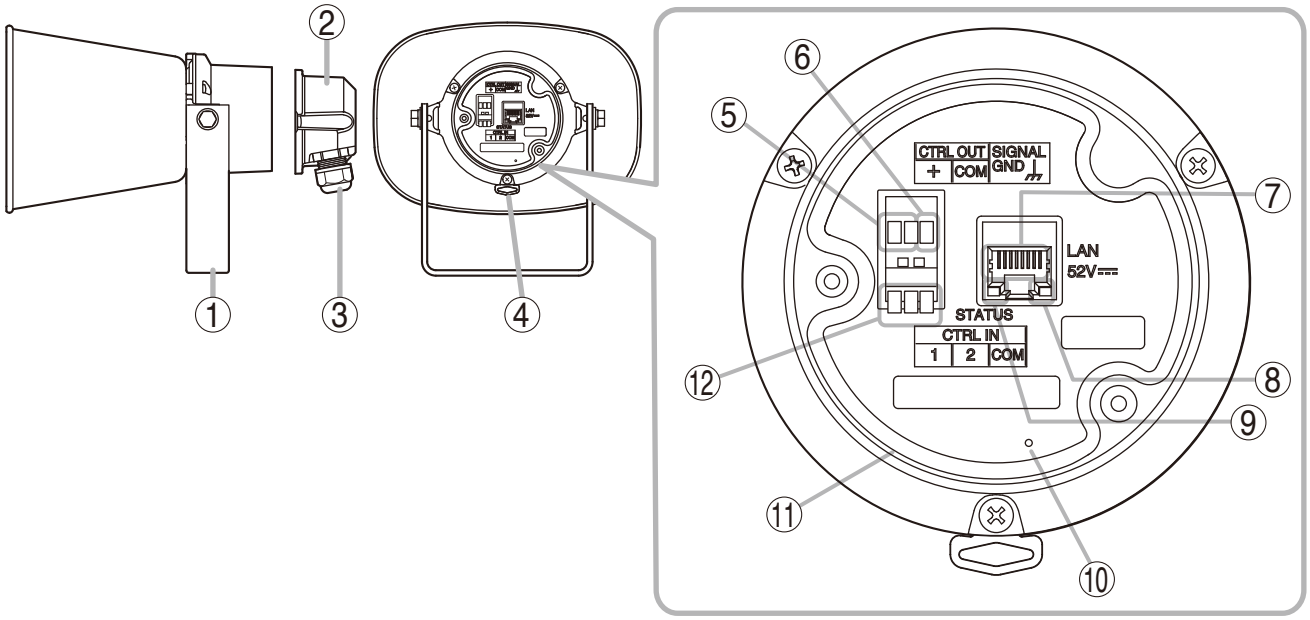
[Side]



* Figure is a reference value.

5. NOMENCLATURE AND FUNCTIONS

[Side] **[Rear (with rear cover removed)]**

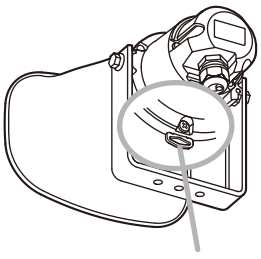


1. Mounting bracket
Used to securely mount the unit to a wall or ceiling.

2. Rear cover (accessory)
This weatherproof cover protects the cable connection parts from the elements.

3. Sealing nut
Functions as a weatherproof cable inlet.

4. Safety wire attachment ring
Used as an attachment point for safety wire to prevent the unit from accidentally falling.



Safety wire attachment ring

5. Control output terminal
Allows control of external equipment in synchronization with speaker operation.

6. Functional ground terminal
If excessive noise is produced when the unit is connected to external equipment, connect this terminal to the external equipment's functional ground terminal*, potentially minimizing the noise level.

* Not safety ground.

7. LAN port
Connect to a PoE+ or PoE switching hub using a LAN cable.

Tip
Amplifier Rated Output is as follows.
- 15 W at PoE+ powered
- 8 W at PoE powered

8. LAN indicator (green)
Flashes when data is being sent or received over a network.

9. Status indicator (orange)
Indicates the unit's operating status by flashing or remaining continuously lit. (See "Network Connection" on p. 10.)

10. Reset key
The unit begins to restart when this key is clicked. Holding down this key (for approx. 1 min and 30 sec) initializes the unit's settings.
(See "INITIALIZATION OF SETTINGS" on p. 13)

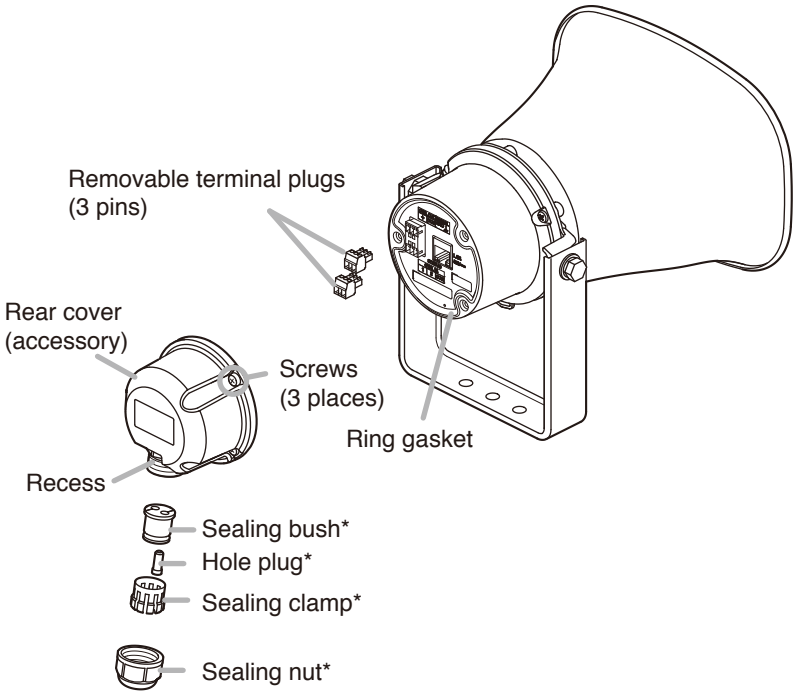
11. Ring gasket
Prevents water from getting inside the speaker's rear cover.

12. Control input terminals
Allow input of control signals from connected external equipment to enable output of internal sound source files or make calls to SIP devices.

6. INSTALLATION

6.1. Attaching the Rear Cover

[Before attachment]



* Attached to the rear cover when shipped from the factory.

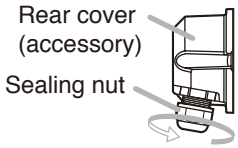
Notes

- To ensure complete weatherproofing, be sure that the following specifications of cable are used for both the LAN cable and the control input and output cable:
  Cable diameter: ø4.5 to 5.2 mm or ø0.18" to 0.2"
  Cable type: Round (not compatible with flat or spiral type cables.)
- The recess is 14.5 mm or 0.57" in diameter.

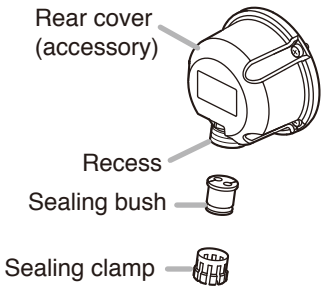
[Installation procedure]

The rear cover is designed to meet specific weatherproofing regulations (IP66 enclosure standards).
During installation, follow the below procedure to ensure that weatherproofing performance is not impaired.

Step 1. Turn the sealing nut counterclockwise to detach it from the rear cover.



Step 2. Remove both the sealing clamp and the sealing bush from the recess in the cover.

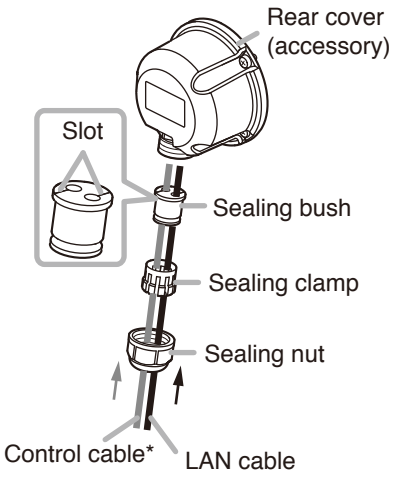


Tip
Use the hole plug with the sealing bush as follows:

If using the control cable in **Step 3** below	If NOT using the control cable in **Step 3** below
Remove the plug from the sealing bush. 	Leave the plug inserted in the sealing bush.

Step 3. Slide each part over the ends of the LAN cable and control cable in the order shown in the figure at right.

Tip
Feed the cable ends through the sealing bush can be more easily done by pressing the cable into the slots in the bush.



*Only when using the control functions

Step 4. Feed the ends of both the LAN cable and the control cable through the recessed hole in the rear cover to connect them to the LAN port and terminals on the rear panel.
For connection method, see "Network Connection" on p. 10 and "Connections to Control Input and Output Terminals" on p. 10.

Step 5. Confirm that the ring gasket installed in the perimeter of the rear panel fits snugly in its groove.

Step 6. Attach the rear cover to the unit using the 3 rear cover screws.

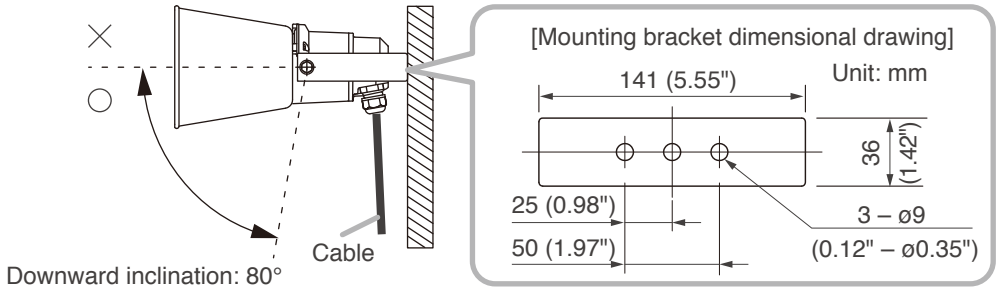
Step 7. Slide the sealing bush and sealing clamp up the cable(s) and reinsert them into the recess in the rear cover.

Step 8. Slide the sealing nut up the cable(s) and screw it securely into position.
After tightening the nut firmly by hand, secure it by rotating another 90° (1/4 rotation) using a wrench.

Note
Take care not to overtighten the nut, as it could be damaged.

6.2. Unit Mounting

Mount the unit so that its downward inclination is within 80° of horizontal, and the cable inlet is facing downward, as shown in the figure below.



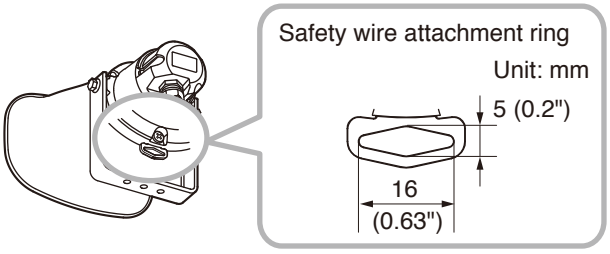
⚠ WARNING

Be sure to attach a safety wire to prevent the unit from falling to the ground.
Observe the following instructions when attaching the safety wire. Failure to do so could result in the speaker falling, potentially resulting in personal injury.

- Select a safety wire that is strong enough to withstand the total weight of the unit being mounted.
- Use a wire with a diameter larger than 1.5 mm or 0.06".
- Attach the safety wire so that it does not become slack.

Notes

- Since safety wire is not supplied with the IP horn speaker, be sure to prepare it separately.
- When attaching the safety wire, be sure that it is fastened securely to the safety wire attachment ring.



7. CONNECTIONS

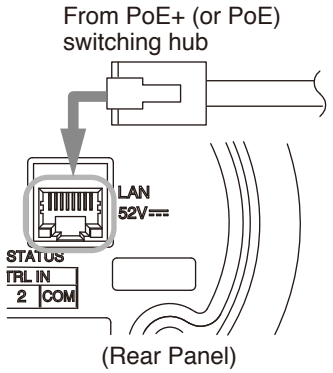
7.1. Network Connection

Connect the IP horn speaker to the PoE+ or PoE switching hub using a LAN cable (straight UTP or STP cable, both rated at Category 5e or greater and fitted with RJ45 connectors). Power to the speaker is supplied by the PoE+ or PoE switching hub.

Compatible switching hubs:
Switching hubs conforming to PoE+ (IEEE802.3at Class 4) or PoE (IEEE802.3at Class 3) specifications.

The unit's operating status after connection is displayed by the status indicator as follows:

Unit Operation	Status Indicator
System startup	Continuously lit (approx. 5 seconds) to flashing (approx. 1 minute 30 seconds)
Broadcast standby	Continuously lit
Broadcasting	Continuously lit
Initialization or firmware update	Flashing
Device malfunction	Flashing (continuously*)



* If the indicator flashes continuously in any other mode than initialization or firmware update, restart the unit by disconnecting and reconnecting the LAN cable.

Note
Please contact your nearest TOA dealer if irregularities continue even after restart.

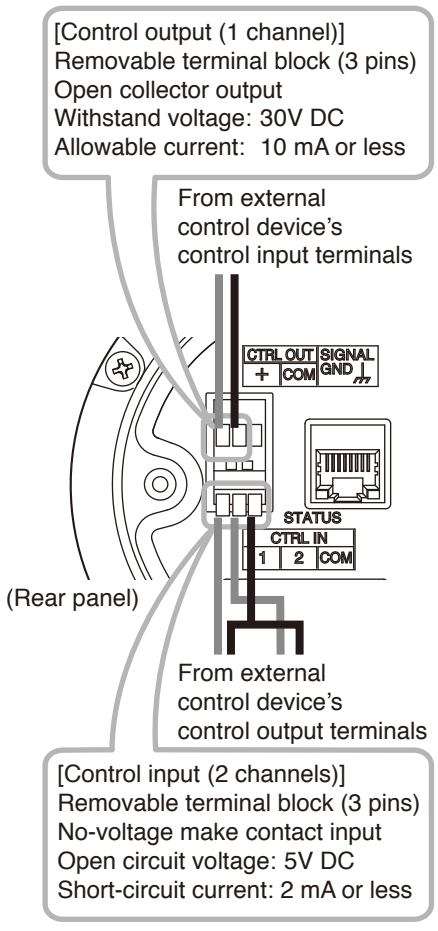
7.2. Connections to Control Input and Output Terminals

Use the supplied removable terminal plugs (3 pins) for connection. Connect a control line of 2 channels control input and 1 channel control output from the external control device to the unit's control input or control output terminal. For connection of the removable terminal plugs, see "Removable Terminal Plug Connections" on p. 11.

The following functions can be assigned to the control input and control output terminals by browser settings:

	Assignable Functions
Control input terminals	• SIP device calls • Internal sound source broadcasts
Control output terminals	• SIP broadcast in progress output • VMS broadcast in progress output • Multicast broadcast in progress output • Internal sound source broadcast in progress output

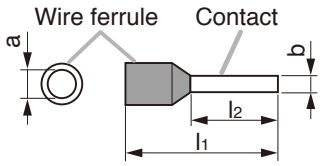
For settings, please refer to the separate setup manual.
The latest version of the setup manual is available on the TOA DATA Library (https://www.toa-products.com/international/).



7.3. Removable Terminal Plug Connections

Please note the following points when making connections to the control input or output terminals using the supplied removable terminal plugs:

- Do not tin stripped wire ends with solder.
  Soldered wire ends will be crushed when the terminal plug screws are tightened, leading to higher contact resistance and potentially resulting in an abnormal rise in the temperature of the connected parts.
- Use AWG 28 – 22 wire (ø0.32 – 0.64 mm solid wire or multi-stranded wire with a cross-sectional area of 0.08 – 0.32 mm^2).
- Strip the wire end back about 7 mm (0.28").
- When connecting 2 wires or a signal cable to a single terminal, crimp them in an insulated (twin) wire ferrule to prevent their core wires from being separated from one another. Use a ferrule of the dimensions shown in the figure as below.



b: 0.8 – 1.1 mm (0.03" – 0.04")
l_2: 8 mm (0.31")

Note
Select dimensions “a” and “l_1” depending on the wires to be used.

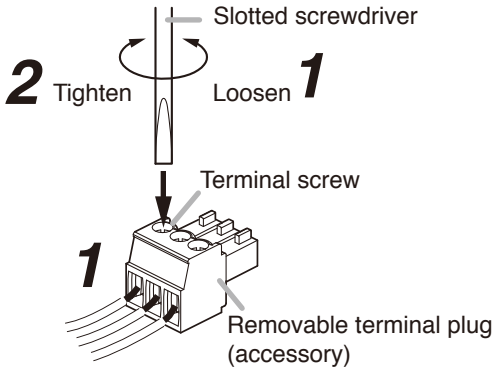
[Plug Connection Procedure]

Step 1. Loosen the terminal screw and insert a wire.

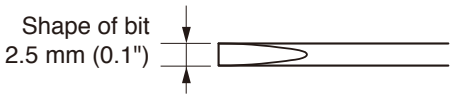
Step 2. Tighten the screw firmly.

Note
Pull on the wire to ensure that it does not come off.

Step 3. Insert the plug into either the control input terminal or control output terminal.



Tip
Recommended slotted screwdriver is as follows.
Blade width: about 2.5 mm (0.1")



8. SETTINGS

8.1. System Settings Summary

The following settings can be performed using a PC browser connected to the same network as the IP horn speaker.

Setting Name	Setting Item
Status	Confirmation of current firmware version, network settings, volume setting and the like.
Network	Network settings such as the IP address.
SIP	Settings of SIP connection enable/disable, SIP server address, authentication information, and audio codec.
VMS Broadcasting	Settings of VMS connection enable/disable and authentication information.
Multicast	Settings of multicast reception enable or disable, multicast port and audio codec.
Audio	Settings of speaker volume and input volume for individual broadcast classifications.
Media	Uploading/Downloading or deletion of sound source files such as messages to or from the internal memory.
Pattern	Registration of sound source reproduction to be interlocked with events as patterns.
Event	Settings of operations to be synchronized with the control input and control output.
Priority	Settings of priority order for each function of SIP broadcast, VMS broadcast, multicast broadcast and internal sound source broadcast.
User	Changes to user name and password.
Maintenance	Backup and restoration of settings, initialization, firmware update and restart of hardware.

For more information, please refer to the separate setup manual.
The latest version of the setup manual is available on the TOA DATA Library (https://www.toa-products.com/international/).

8.2. System Requirements

Connectable system requirements are as follows:

Display	Resolution: 1366 × 768 or greater
OS	Windows 10 Pro (64-bit), Windows 10 Home (64-bit)
Browser	Microsoft Edge, Google Chrome

Notes
- Windows and Microsoft Edge are registered trademarks of Microsoft Corporation of the United States in the United States and other countries.
- Google Chrome is a trademark of Google LLC of the United States in the United States and other countries.

8.3. Connections

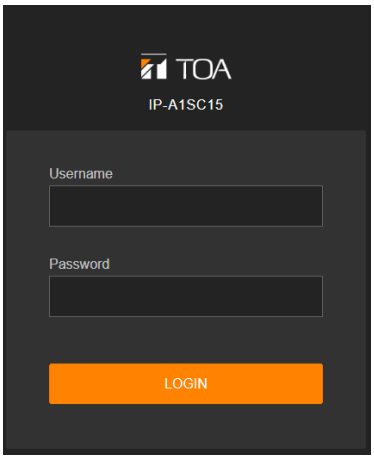
8.3.1. Connection presets

The unit is factory-preset as follows:
Username: admin
Password: guest
IP address: 192.168.14.1
Subnet mask: 255.255.255.0
Default gateway: 192.168.14.254

Before connecting a PC to the IP horn speaker and changing its setting, it will be necessary to set the PC's network settings so that it can operate on the same network as the IP horn speaker. Take care that no IP addresses are duplicated in the same network. For example, if the IP horn speaker's IP address is 192.168.14.1, set the PC's IP address to 192.168.14.10 or the like.

8.3.2. Making connection

Notes
- Avoid simultaneously connecting to the IP horn speaker from multiple PCs.
- Avoid simultaneously connecting to the IP horn speaker from a single PC using multiple browsers.



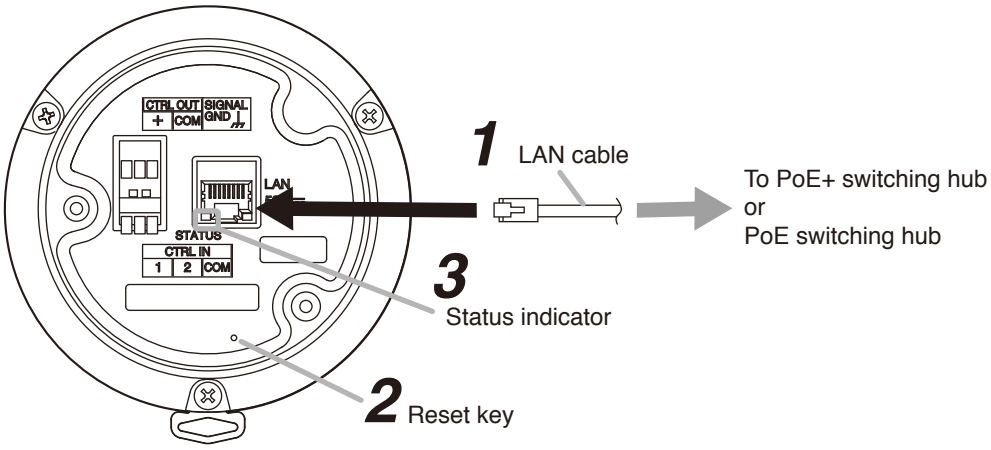
Step 1. Start the browser and enter the unit's IP address in the address field.
The Login screen is displayed.

Step 2. Enter the username and password, and click the LOGIN button.
The Status screen is displayed, enabling a range of settings.

Note
For details regarding the setting method, please refer to the separate setup manual. The latest version of the setup manual is available on the TOA DATA Library (https://www.toa-products.com/international/).

9. INITIALIZATION OF SETTINGS

Follow the procedure below to return all IP horn speaker setting contents to their initial settings:
When initialized with the Reset key, the unit's sound source files are left untouched, and not deleted.



Step 1. Connect the unit to the PoE+ or PoE switching hub using a LAN cable.
The unit will be started.

Step 2. Hold down the Reset key located on the rear panel using a pointed tool.
The unit automatically restarts and settings initialization begins. During this period, continue to hold down the Reset key (for approx. 1 min and 30 sec).

Tip
Clicking on the Reset key causes the unit to be restarted.
If pressure on the Reset key is released part way through the initialization process, only unit restart will be performed, and the settings will not be initialized.
To click on the Reset key, use a tool that is thinner than ø1.5 mm (0.06") and longer than 15 mm (0.59").

Step 3. When the status indicator lights orange, release the reset key.
When initialization is complete, all settings will be initialized to their default settings.

[Default Settings]
Username: admin
Password: guest
IP address: 192.168.14.1
Subnet mask: 255.255.255.0
Default gateway: 192.168.14.254

10. CAUTIONS REGARDING THE AVC/H.264 PATENT LICENSE

TOA's IP-A1SC15 IP horn speaker employs MPEG technology (AVC/H.264 Standard) regarding the handling of image information. TOA Corporation has received approval to use this technology from MPEG LA, LLC, the patent management group.

Please note that the use of this product is prohibited except the following cases:
The use of the product is intended for personal use of a user of the MPEG technology and also for non-profit use, which includes (i) video encoding conforming to the AVC/H.264 Standard (hereinafter referred to as "AVC/H.264") and/or (ii) personal use and decoding of AVC/H.264 encoded by an MPEG technology user engaged in non-profit activities and/or AVC/H.264 furnished by a video provider who is granted a license by MPEG LA, LLC.

Regarding use for sales promotion or commercial purposes, or additional licensing information, please contact MPEG LA, LLC (https://www.mpegla.com).

11. OPEN SOURCE SOFTWARE

This product uses software based on open source software license(s).
If you need further information about the original open source software including source code, please download it from the TOA DATA Library (https://www.toa-products.com/international/).

Please note that we cannot answer any questions about the contents of the original source code.

12. SPECIFICATIONS

Power Source	PoE+ (IEEE802.3at Class 4), PoE (IEEE802.3af Class 3)
Power Consumption	22 W (at PoE+ powered, rated output) 13 W (at PoE powered, rated output) 5 W (IEC62368-1)
Amplifier Rated Output	15 W (at PoE+ powered), 8 W (at PoE powered)
Sensitivity	112 dB (1 W, 1 m) (500 Hz to 2.5 kHz, peak level)
Maximum Sound Pressure level	124 dB (at PoE+ powered, 15 W, 1 m) (500 Hz to 2.5 kHz, peak level) 121 dB (at PoE powered, 8 W, 1 m) (500 Hz to 2.5 kHz, peak level)
Frequency Response	280 Hz to 12.5 kHz
Audio Codec	PCMU (G.711u), PCMA (G.711a), G.722
Broadcasting Mode	SIP Broadcasting Mode: PCMU/PCMA/G.722 Multicast Broadcasting Mode: PCMU/PCMA/G.722, Max. 10 ports VMS Broadcasting Mode: Audio Backchannel, PCMU Internal Message Broadcasting Mode **Note** Each broadcast mode can be assigned an order of priority using the Priority Setting function.
Internal Messages	Max. 20 messages (Max. recording capacity: 80 MB) Supported file formats WAV file: 8/16/44.1/48 kHz sampling frequency, 8/16 bit, monaural/stereo MP3 file: 32/44.1/48 kHz sampling frequency, 64 to 320 kbps, CBR/VBR, monaural/stereo Repeat count: 1 to 10 times Interval time: 0 to 30 sec Trigger: Control Input or Remote API (HTTP)
Network I/F	100BASE-TX, MDI/MDI-X, RJ-45
Network Protocol	TCP/IP, UDP, HTTP, RTP, ARP, ICMP, RTSP, SIP (RFC3261)
Control Input	2 channels, no-voltage make contact inputs, open voltage: 5 V DC, short-circuit current: 2 mA or less, removable terminal block (3 pins)
Control Output	1 channel, open collector output, withstand voltage: 30 V DC, control current: 10 mA or less, removable terminal block (3 pins)
Indicator	LAN LINK/ACT (green), STATUS (orange)
Dust/Water Protection	IP66
Operating Temperature	–30 to +55 °C (–22 to +131 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	Horn flare and body: Aluminum, off-white (RAL 9010 equivalent), paint Reflector horn: ABS resin, off-white (RAL 9010 equivalent) Rear cover: PC resin, off-white (RAL 9010 equivalent), paint Bracket, screws and bolts: Stainless steel
Dimensions	222 (w) x 211 (h) x 276 (d) mm (8.74" x 8.31" x 10.87")
Weight	1.4 kg (3.09 lb)

Note: The design and specifications are subject to change without notice for improvement.

• **Accessories**
Rear cover 1
Removable terminal plug (3 pins) 2

• **Optional products**
Speaker mount bracket: SP-131, SP-201, SP-301
Pole band: YS-60B

Traceability Information for USA

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