

CEILING MOUNT FIRE DOME SPEAKERS

PC-1867F, PC-1867FC

Thank you for purchasing TOA's Ceiling Mount Fire Dome Speaker.

Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.
- 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.
- Avoid mounting the unit in locations exposed to constant vibration. The mounting bracket can be damaged by excessive vibration, potentially causing the speaker to fall, which could result in personal injury.

WARNING

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

- Use only the specified amplifier output voltage and impedance, as exceeding the specified limits could result in fire or other failures (high-impedance applications).
- To avoid accidental air explosions, do not use the unit around gasoline, thinner or other combustibles.
- 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.
- Do not use other methods than specified to mount the unit. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.

CAUTION

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

- To avoid electric shocks, be sure to switch off the amplifier power when connecting the speaker.
- Avoid installing the unit in humid or dusty locations, or in locations exposed to heaters, solvents, acid, alkali, smoke, or steam, as excessive exposure to these factors could result in the speaker falling off, electric shock or fire.
- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Have the unit periodically checked by the shop from where it was purchased. Failure to do so could result in the speaker falling off due to damage or corrosion to the speaker or its mounts, and possible personal injury.

2. GENERAL DESCRIPTION (Patent pending)

TOA's PC-1867F and PC-1867FC Ceiling Mount Fire Dome Speakers feature an iron-made dome that prevents the fire from spreading in the ceiling in case of fire.

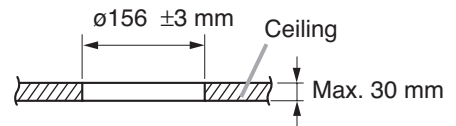
The speaker can be easily installed using the speaker mounting spring, and the dome can also be easily mounted in the speaker mounting hole in the ceiling panel.

The PC-1867F comes with a push-in connector that permits one-touch cable connection as well as bridging and branch wiring, while the PC-1867FC is provided with a ceramic terminal block of screw type.

The PC-1867FC is certified according to the European Standard EN 54-24: 2008 and compliant with the British Standard BS 5839-8: 2008.

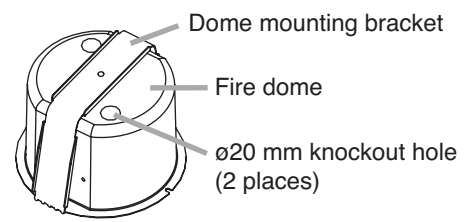
3. INSTALLATION

Step 1. Using the supplied paper pattern as a guide, open a 156 mm ± 3 mm mounting hole in the ceiling panel.



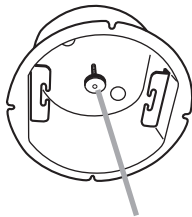
Step 2. Punch out the knockout hole in the fire dome, then install the supplied cable entry rubber grommet in the knockout hole.

Note: The grommet's cable entry hole is covered with a thin membrane. Cut a hole in the membrane to match the size of the speaker cable used.



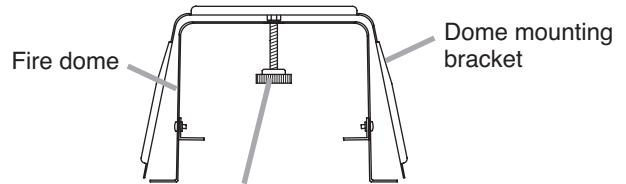
Step 3. Loosen the dome mounting thumbnut.

[Interior View]



Dome mounting thumbnut

[Cross-Section View]

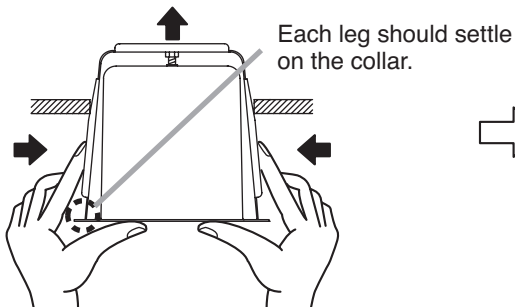


Important

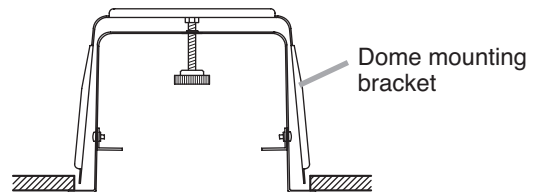
Unscrew the dome mounting thumbnut until it reaches the end of the screw shaft.

Step 4. Feed the speaker cable through the rubber grommet into the dome interior.

Step 5. Press the fire dome assembly into the previously prepared hole in the ceiling.



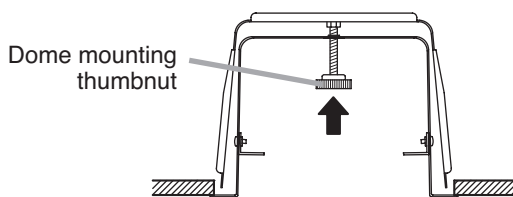
Push up the dome assembly pressing the bracket sides with your fingers.



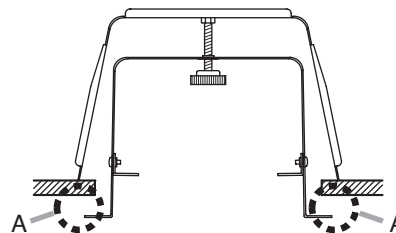
Caution

Since the dome mounting bracket is not placed on the ceiling panel at this stage, as shown in the above figure, the dome could fall if released, so continue to provide manual support.

Step 6. Push in the dome mounting thumbnut.

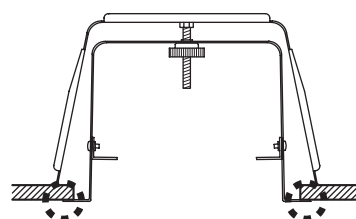
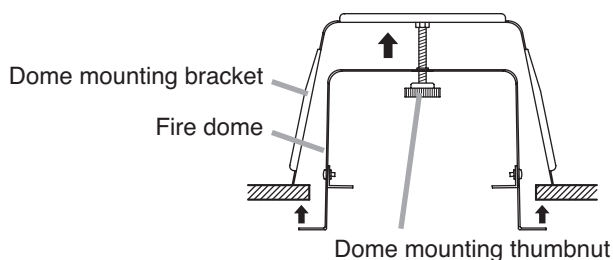


Firmly push the thumbnut and screw shaft in the direction indicated by the arrow.



The legs of the dome mounting bracket will pop open and settle on the back surface of the ceiling panel, providing the dome with partial support. If released, a gap behind the collar of the dome will result (A).

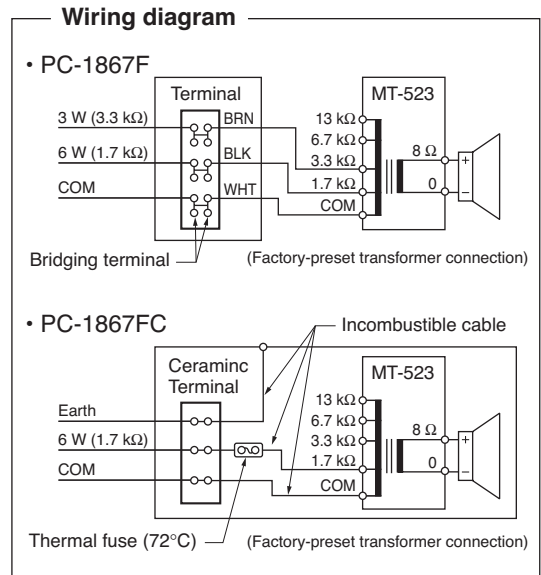
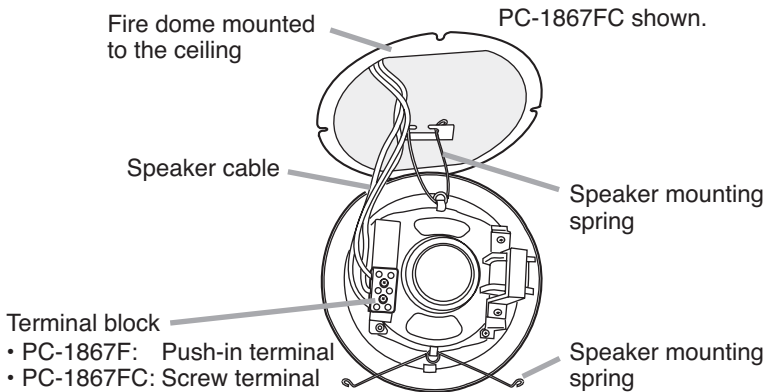
Step 7. Turn the dome mounting thumbnut clockwise to tighten and firmly secure the dome to the ceiling panel.



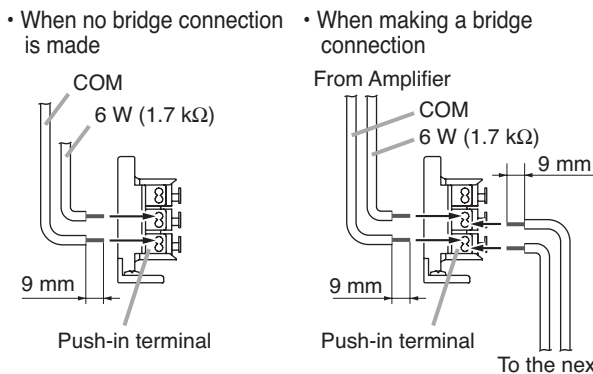
Tighten fully for a secure installation.

Step 8. Connect the speaker cable.
Wire the speaker according to the terminal indication.

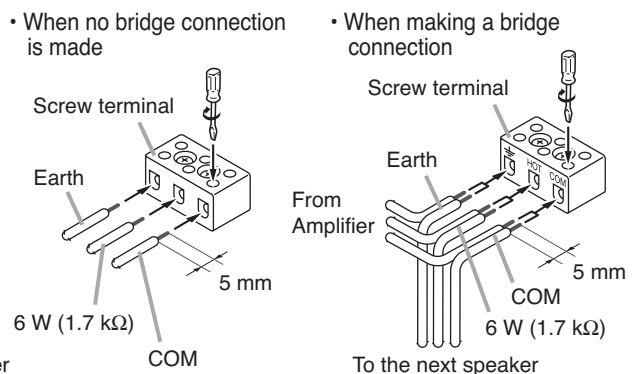
Note: Hook the two ends of one of the speaker mounting springs into the hooks in the fire dome during connection.



[PC-1867F terminal block (1.7 kΩ use)]



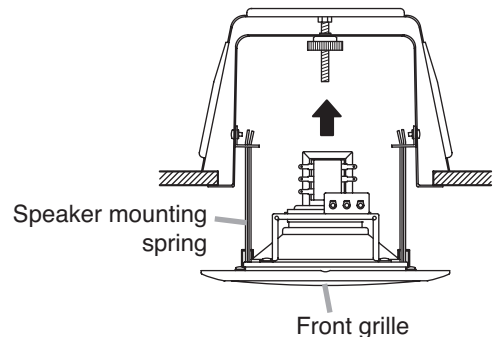
[PC-1867FC terminal block (1.7 kΩ use)]



Step 9. Hook the remaining speaker mounting spring into its corresponding hook in the dome, then push the speaker up into the fire dome.

Caution
Do not press directly on the front grille, as the grille could become dented or damaged.

Note
See to it that the speaker cable is not pinched between the fire dome and the front grille.



4. INSTALLING THE SAFETY WIRE (prepared separately by the installer)

Step 1. Tie one end of the safety wire around the terminal fitting metal.

Note: When using a bare safety wire, wrap insulation tape around it to prevent electrical contact with the connection terminals, transformer taps, or other electric parts.

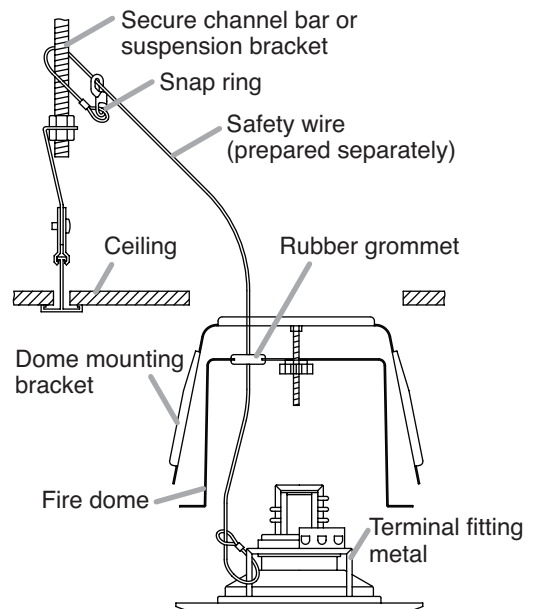
Step 2. Make a cut in the rubber grommet with a knife or a screwdriver, then run the safety wire through it.

Step 3. Tie snap ring around a secure channel bar or suspension bracket.



Step 4. Feed the speaker cable through the rubber grommet into the dome interior.

Step 5. Secure the fire dome assembly in the ceiling, then connect the speaker cable to the terminal block.

Step 6. Attach the speaker to the fire dome.
Note: If the speaker cable and safety wire are too long, to prevent them from being tangled inside the fire dome, gently push them back out of the fire dome so the rubber grommet does not get removed.



5. SPECIFICATIONS

Model No.	PC-1867F	PC-1867FC
Rated Input	6 W (100 V line), 3 W (70 V line)	
Rated Impedance	100 V line: 1.7 kΩ (6 W), 3.3 kΩ (3 W), 6.7 kΩ (1.5 W), 13 kΩ (0.8 W) 70 V line: 1.7 kΩ (3 W), 3.3 kΩ (1.5 W), 6.7 kΩ (0.8 W), 13 kΩ (0.4 W)	
	6.7 kΩ, 13 kΩ: Internal wiring must be changed.	3.3 kΩ, 6.7 kΩ, 13 kΩ: Internal wiring must be changed.
Sensitivity	90 dB at 1 W, 1 m (330 Hz – 3300 Hz, pink noise)	
	—	79 dB at 1 W, 4 m (100 Hz – 10 kHz, pink noise) according to EN 54-24 91 dB at 1 W, 1 m (100 Hz – 10 kHz, pink noise) converted based on EN 54-24
Maximum Sound Pressure Level	85 dB at 6 W, 4 m (100 Hz – 10 kHz, pink noise) according to EN 54-24	
	—	97 dB at 6 W, 1 m (100 Hz – 10 kHz, pink noise) converted based on EN 54-24
Frequency Response	100 Hz – 16 kHz (without fire dome)	
Coverage Angle (–6 dB)	—	500 Hz: 186°; 1 kHz: 178°; 2 kHz: 148°; 4 kHz: 76°; according to EN 54-24
Speaker Component	12 cm cone type	
Standard	Traceability Information for Europe (EMC directive 2004/108/EC)	The European Standard EN 54-24: 2008 1438/CPD/0183 Certified year: 10 Loudspeaker for voice alarm systems for fire detection and fire alarm systems Environmental type: A (Indoor applications) In compliance with the British Standard BS 5839-8: 2008
		 1438
Dimensions for Fixing Hole	ø156 ± 3 (mounting hole) x 30 (maximum ceiling thickness) mm	
Speaker Mounting Method	Spring catch	
Applicable Cable	Solid wire: ø0.8 – ø1.6 mm (AWG 20 – 14)	Solid wire: ø1.0 – ø3.0 mm (AWG 18 – 9)
	7-core twisted wire: 0.75– 1.25 mm ² (AWG 18 – 16)	
Connection	Push-in connector (Bridging terminal)	Screw connector (Ceramic terminal) bridging
Finish	Baffle:	Aluminum, off-white (RAL 9010 or equivalent color), paint
	Grille:	Aluminum net, off-white (RAL 9010 or equivalent color), paint
	Dome mounting bracket:	Steel plate, trivalent chromate treatment plating
	Fire dome:	Steel plate, black, paint
Dimensions	ø180 x 11 (exposed section) + 110 (d) mm (excluding dome mounting bracket)	
Weight	1.4 kg (including bracket and fire dome)	

Notes

- The design and specifications are subject to change without notice for improvement.
- The Specifications data was measured in an anechoic chamber.
- Reference axis: Axis is on the center of grill surface and perpendicular to the grill surface.
- Reference plane: Plane is on the grill surface and perpendicular to the reference axis.
- Horizontal plane: Plane is containing the reference axis and perpendicular to the reference plane.
- Other technical data: See the specification sheet PC-1867F/FC.

• Accessories

Rubber grommet 2 Paper pattern 1

Traceability Information for Europe (EMC directive 2004/108/EC)

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Authorized representative:
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Suederstrasse 282, 20537 Hamburg, Germany



TOA Corporation

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