

Commercial Loudspeakers

SC-800 & SC-800f
In-Ceiling / Wall Models

The following manual is designed to give you, the installer or owner, basic information as to the speaker's installation and operation. It is beyond the scope of this manual to go into all the details that must be taken into consideration in a commercial audio system. When installing the wiring and speakers it is important to adhere to all local codes and regulations.

If you have any questions regarding this speaker which are not answered by this manual, contact your local dealer for assistance. For the most current information please visit www.oemsystems.com.

MINIMUM TOOLS REQUIRED

2 Phillips Head Screw Driver / Drill Driver
Wire Cutter / Stripper

Other Possible Tools

Tape Measure, Pencil, Ladder, Drywall Saw, Stud-Finder, etc.

GENERAL DESCRIPTION

These speakers have specially designed woofers with a dual cone that aids in high frequency reproduction. The speaker baskets utilize spring loaded push terminals for conventional 8-ohm wiring but the baskets also have a provision for mounting an audio transformer when the speakers are used in 25V, 70V, or 100V distributed-audio systems. Please see the "Accessories" section of this manual or the website listed below for information on accessories that are made to integrate with this product.

SHIPPING DAMAGE

Each speaker is thoroughly tested before it leaves the factory. However, in shipment, accidents may occur. Please inspect your speakers carefully when you receive them to make sure there is no damage. If there is, please notify your dealer or supplier immediately for assistance. If you received your speakers by public transportation, report the damage at once to the shipping company.

AMPLIFIER OPERATION

These speakers will perform well with amplifiers from 1 to 25 Watts RMS. However, damage to the speakers can be done by amplifiers of nearly any power rating if the amplifier is overdriven into clipping. "Amplifier clipping" is a phrase used to describe a condition when, because of the volume demand, an amplifier is being asked for more power than it can give. Clipping causes distortion of the audio signal. If you should hear an unusual amount of distortion at high listening levels then consider reducing the volume. **DAMAGE DONE TO A SPEAKER BY CLIPPING IS NOT COVERED UNDER THE WARRANTY.**

SPEAKER PLACEMENT

Placement of in-ceiling and in-wall speakers should be carefully considered. If you are inexperienced then contact a professional for assistance with the planning and installation process. It is beyond the scope of this publication to discuss all of the various aspects of speaker placement. However, here are some considerations.

If the speakers are to be installed in a T-bar ceiling then the ceiling panels should be supported using a bridge. A "T-bar Bridge" is available that is specially designed to fit these models. Additionally, if the speakers are installed in a ceiling where the air-space above the ceiling is used for the air return of an HVAC system (known as a plenum space) then a special fire rated cover must be used over the back of the speakers. A special fire-rated Plenum Dome is available that integrates with the T-bar bridge mentioned above. Please see the "Accessories" section of this manual or the website listed below for information on accessories that are made to integrate with this product.

The speakers can be installed directly into drywall without any additional support. In new construction where drywall has not yet been installed, rough-in-kits are available to reserve the speaker location. The hole is cut when the drywall is installed. The speaker cable can be tied off on the rough-in-kit after securing it to a nearby joist or stud.

WIRING

Note: The following information is provided as a guideline. The commercial codes in your area may differ.

It is important to wire your system with the proper wire. This includes the wire gauge and cable rating. For standard 8-ohm operation we recommend that the cable be at least 18 gauge, and 16 gauge or larger for runs of over 100 feet. For constant-voltage 70V & 100V distributed-audio systems a smaller diameter wire can be used, such as 20 or 22 gauge. This is because the current in the wire is lower. For common in-wall and in-ceiling applications the cable should be CL-2 or CL-3 rated. For plenum spaces a plenum rated wire is necessary unless the wire is run in Electrical Metallic Tubing (EMT, metal conduit). Allow about 2 feet (0.6m) of free cable at the speaker cut-out and sufficient length at the other end to reach the electronics. Having to add extra cable later can be tedious and time consuming.

Avoid bundling speaker cables parallel to electrical cables for long distances, especially in distributed-audio systems.

	Overall	Cut-Out (Round x Depth)
SC-800f	9-7/8" round	8-5/8" x 3-5/16"
SC-800	9-13/16" round	8-5/8" x 3"

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Also, avoid running audio cables and microphone cables within the same conduit. When securing the cable, use care not to staple or nail the electrical conductors.

When connecting your speakers, make sure proper polarity (phasing) is maintained. Simply put, this means being sure the same wire which is hooked to the positive terminal of the amplifier has its other end hooked to the positive terminal of the speaker. It is important to check this on all speakers. If the connections on one of the speakers are reversed, (out of phase) the quality of bass will be impaired.

INSTALLATION

Once the speaker locations are established use the cardboard template (the outside of the inner cardboard disk) or the plastic compass provided with your speaker to draw the speaker cut-out. The necessary 8-5/8" hole-diameter is marked on the compass. The cardboard templates may also be used as a visual aid for placement of the speakers by temporarily holding the templates in place with a push tack or tape. Note: We recommend that the edge of the speaker holes be at least 3/4" (19mm) away from joists or studs whenever possible to allow clearance for the toggle clamps.

Use an appropriate tool to cut the speaker mounting hole. On drywall, clean cuts can be made with a drywall saw. Cut the hole to the inside of the drawn circle.

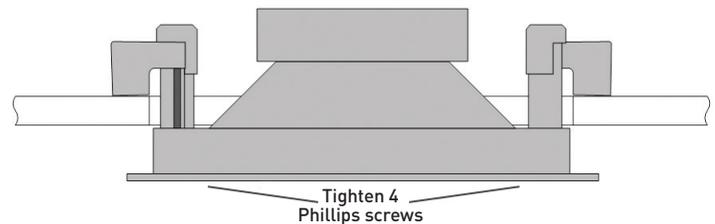
As the drawing shows, the speakers utilize Toggle Clamps which, after tightening, hold the speakers in place. Ensure that the toggle clamps are rotated into their "Home" position. This way, they will clear the edge of the cut-out.

Verify that the speaker fits properly into the cut-out before making any connections. Connect the wire conductors to the terminals on the back of the speaker by depressing each spring terminal, inserting the wire into the hole, and releasing the terminal. Use care to observe the proper polarity (+ & -) and to ensure that the terminal captures the conductor (not the insulation). If a transformer is used, install it with two #6x3/8" screws so that the input label is facing out and can be read. These are supplied with the AT-16 Transformer along with two lock washers. Connect the 8-ohm side of the transformer to the speaker input terminals, red-to-red and black-to-black. Connect the input wires to the appropriate input tap of the transformer using two wire nuts (not supplied). The negative terminal on the AT-16 Transformer is marked "COM."

When using transformers in a constant-voltage distributed-audio system, the rule of thumb is that the sum of all the input taps should be approximately equal to the rated output power

of the amplifier. Example: If 10 speakers are tapped at 2W each, then the amplifier should be rated for 20W output or a little more. One primary benefit of a constant-voltage system is that the speakers in the system don't all need to be connected at the same tap position. So in the above example, one speaker could be connected at 8W, two others at 4W, and another four connected at 1W. (8+4+4+1+1+1+1=20)W This allows each speaker to play at a volume level appropriate for the location.

Insert the speaker into the hole and tighten the four toggle screws. As you start to turn each screw the toggle clamps will rotate outward to engage the ceiling or wall material as shown. CAUTION: DO NOT OVER-TIGHTEN THE CLAMPS. Too much torque may damage the toggle, causing the speaker not to seat securely. A snug fit is all that is necessary to provide proper performance.



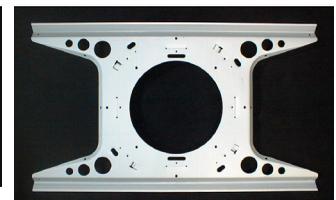
Attach the grille to the speaker. The SC-800f uses a magnetic attachment. Simply place the grille over the speaker and the grille will snap to the speaker. A square grille is available should it be preferable for the décor. The grille of the SC-800 presses into the slot of the frame. Should you wish to remove the grille from the speaker, pull at the grille's edge. On the SC-800f model this can be done using one's finger nails or finger tips. For the SC-800 a tool is supplied that can be inserted through a perforation at the grille's edge. Pull the grille outward after insertion of the tool.

Note: The grilles can be painted using multiple light coats of paint. Certain paints will require thinning to avoid clogging the grille's perforations. It is not necessary or recommended to remove the scrim cloth from the back of the grille prior to painting.

Accessories



Plenum Dome
Model: PE-8



T-bar Bridge Model: PB-8



Frameless Square Grille
Model: MGS-8f



70-Volt Transformer Model: AT-16