

SONANCE

PROFESSIONAL SERIES
HIGH OUTPUT SURFACE MOUNT LOUDSPEAKER
PS-S85T
MANUAL

PROFESSIONAL SERIES HIGH OUTPUT SURFACE MOUNT

PS-S85T

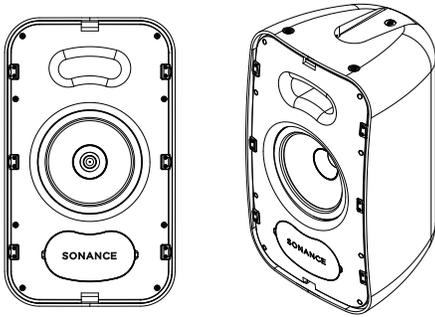


TABLE OF CONTENTS

- 2 Box Contents
- 3 Product Features
- 4 Product Description
- 4 Amplifier Selection
- 4 Wire Selection
 - 70V/100V System
 - 8 ohm System
- 4 Loudspeaker Placement and Mounting
- 4 Pivoting the Loudspeaker
- 5 Grille and Loudspeaker Painting
- 5 Installation
- 7 Setting Transformer Tap
- 7 Fitting Terminal Cover
- 7 Removing Grille
- 9 Technical Specifications
- 10 Certifications and Safety Agency
- 10 Technical Assistance and Service
- 11 Warranty

BOX CONTENTS

SURFACE MOUNT HIGH OUTPUT LOUDSPEAKER

- (1) PS-S85T
- (1) Loudspeaker Grille
- (1) FastMount Bracket
- (1) Wiring Terminal Cover
- (1) Euroblock Wire Connector
- (1) Variable Dispersion Horn
- (1) Collar Removal Tool
- (4) Rubber Mounting Point Covers

IMPORTANT SAFETY INSTRUCTIONS

This product is intended to be installed by professional AV integrators and installers only. This product manual is intended to serve as a general guideline for most applications. It is the installer's responsibility to ensure this product is installed in accordance with local building codes and regulations. Consult a local authority for specific requirements, regulations, and building codes of the jurisdiction in which this product is to be installed.

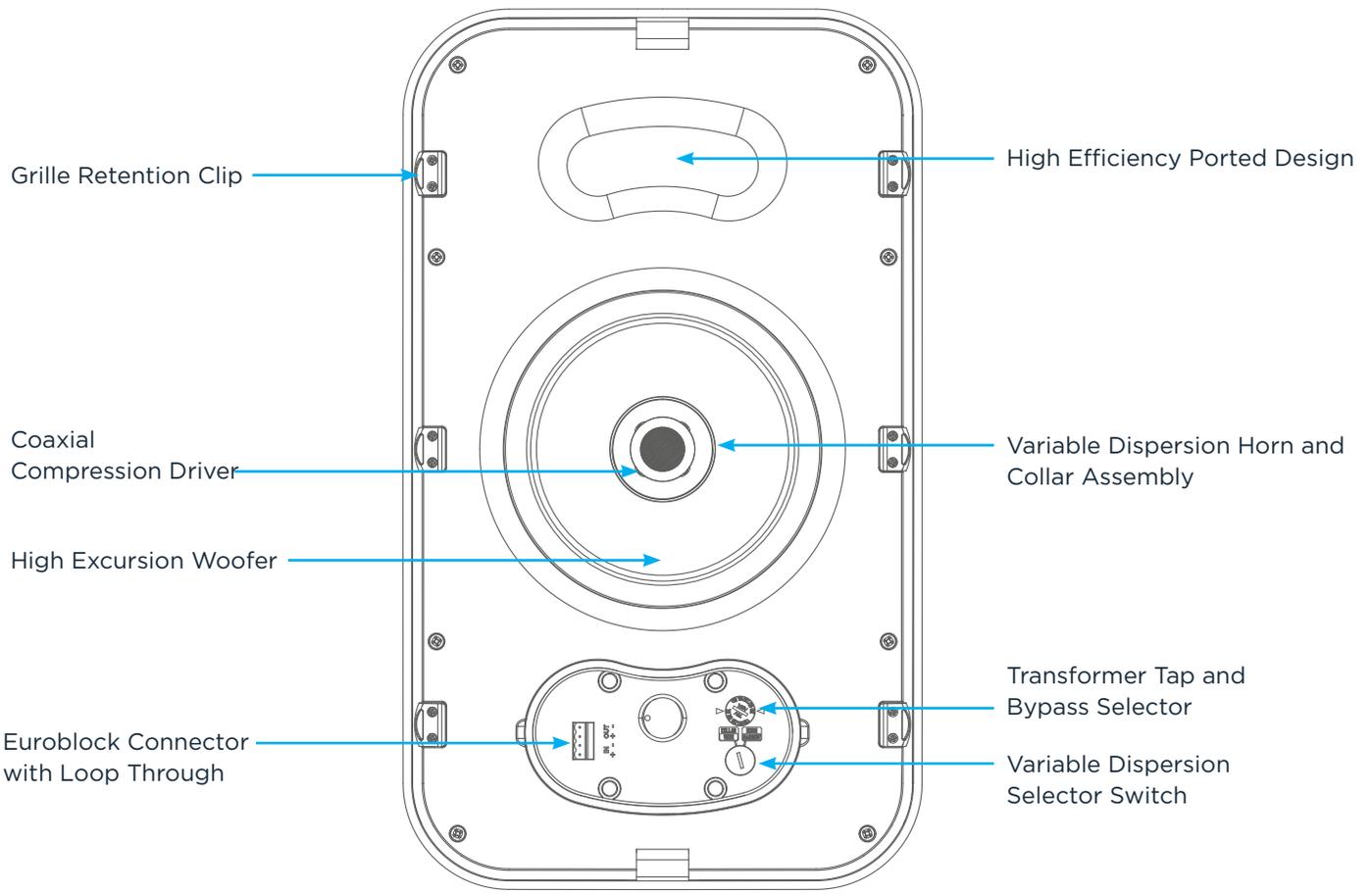
READ THIS DOCUMENT IN ITS ENTIRETY BEFORE ATTEMPTING USE

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with a dry cloth.
6. Install in accordance with the manufacturer's instructions.
7. Do not install near a heat source such as radiators, heat registers, stoves, fireplaces, or other apparatus (including amplifiers) that produce heat.
8. Only use attachments/accessories specified by Sonance.
9. This product is suitable for installation in outdoor environments.
10. Refer all servicing to qualified service personnel.

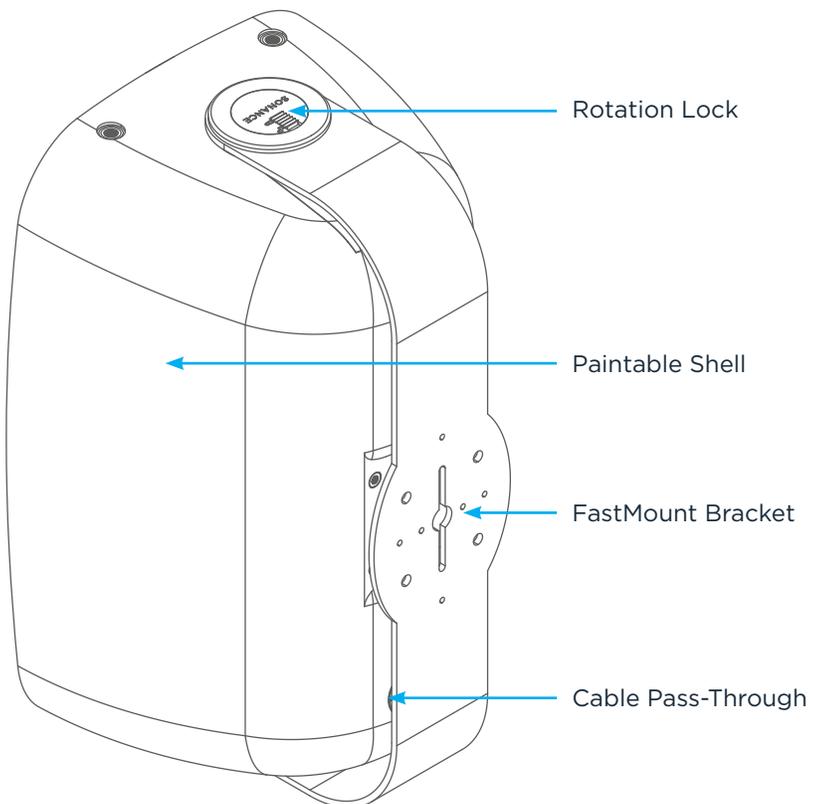
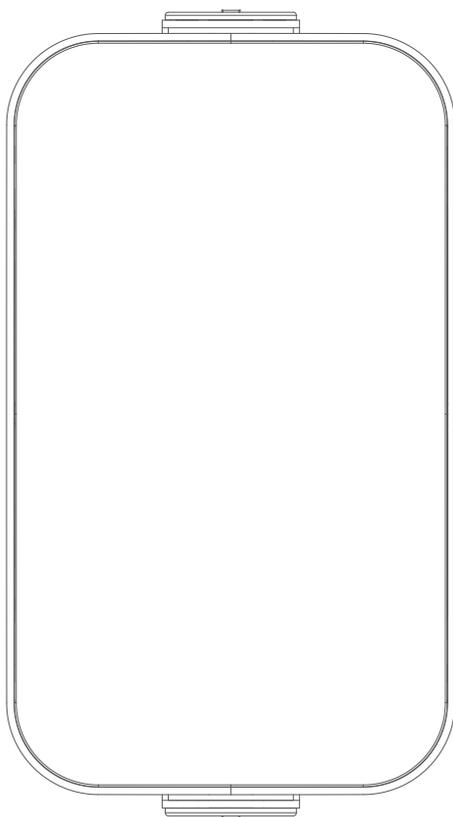


Scan QR code for additional information and resources. For technical support call 949.492.7777 or visit www.sonance.com/professionalseries

PRODUCT FEATURES



Corrosion-Resistant, Dacromet-Plated, Steel Grille with Weatherized, Powder Coating



PRODUCT DESCRIPTION

Sonance Professional Series High Output is a range of 70V/100V impedance and tap selectable loudspeakers available as in-ceiling, surface mount, or pendant models. These High Output models achieve elevated SPL levels with the ability to field-configure each loudspeaker for wide or narrow directivity. Their shared voicing across form factors ensure seamless sonic integration when deployed together throughout commercial spaces.

AMPLIFIER SELECTION

When choosing an amplifier the maximum number of loudspeakers and the output level of each loudspeaker must be known. The sum of the tap settings should never exceed 80% of the amplifier's rated output. For example, if there are five loudspeakers and the taps are set at 15 watts, the load would be 75 watts (5 x 15 watts = 75 watts). To arrive at the needed power for this number of loudspeakers, simply divide the total load by 0.8. In this case, $75/0.8 = 93.75$ watts. A standard 100 watt amp would safely drive this load. To calculate the amount of usable power an amp offers, simply multiply the rated output by 0.8, i.e., 100 watts x 0.8 = 80 watts.

WIRE GAUGE - 70V/100V SYSTEM

The most common wire used on commercial 70 volt systems is 18 AWG, 2 conductor, stranded, and jacketed without a shield. The wire starts at the amplifier location and is paralleled at each loudspeaker location. Wire length using 18 AWG is appropriate up to 700ft with a 100 watt load. If you double the load (sum of your tap settings), you will reduce the footage by half, to 350ft. Conversely, if you halve the load, you may double the acceptable wire length, i.e., a 50 watt load is safe over 1,400ft of 18 AWG. Stepping up to 16 AWG wire extends the allowable run length by approximately 35%. For example, a 100 watt load can go 700ft on 18 AWG; the same load may be placed on 1,100ft of 16 AWG.

WIRE GAUGE - 8 OHM SYSTEM

The total wire resistance should be less than 10% of the loudspeaker impedance in an 8 ohm system. The loudspeakers are nominally 8 ohms impedance, so your total wire resistance should be no more than 0.8 ohms. In simple terms, the extra resistance from the wire will have a very negative affect on the sound quality of the loudspeaker. The sound can be less dynamic, definition of bass frequencies can be reduced, and in extreme cases, the high frequencies can be attenuated. Amplifier power is also wasted in the wire, reducing the maximum output level of the system. Please refer to the following chart (see Figure 1) when deciding on the appropriate wire gauge for your installation.

LOUDSPEAKER PLACEMENT

The FastMount mounting system makes it easy to mount the loudspeakers in a variety of positions and locations (see Figure 2).

WIRE RESISTANCE IN OHMS VS. LENGTH OF CABLE						
Distance in Feet	50'	100'	150'	200'	250'	300'
20 AWG	0.86	1.73	2.59	3.45	4.32	5.18
18 AWG	0.65	1.30	1.94	2.59	3.24	3.89
16 AWG	0.43	0.85	1.28	1.71	2.14	2.56
14 AWG	0.27	0.54	0.81	1.08	1.35	1.62
12 AWG	0.17	0.34	0.51	0.68	0.85	1.02

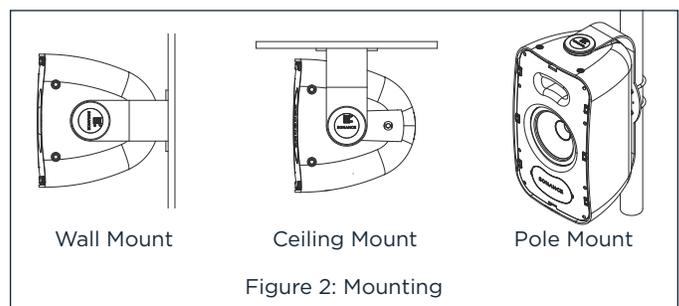
Figure 1: Wire Resistance

WALL/CEILING MOUNTING

It is important that the bracket is securely mounted onto a structurally sound surface, capable of withstanding the weight of the product and any vibration created by the operation of the loudspeaker. Four screws points must be used at all times. A screw size of #14 to #20 diameter x 2" length or M6 to M8 diameter x 50mm length is recommended. When mounting onto drywall or plasterboard, the bracket should be affixed to a joist or stud. When mounting onto brick or concrete, wall plugs or concrete anchors should be used. Install a safety cable from one of the 1/4-20 UNC threaded holes on the back of the loudspeaker to a secure location on the adjoining mounting surface (hardware not included). Optional compatible third party mounts: OmniMount 15B (black) and OmniMount 15W (white).

POLE MOUNTING

To mount the loudspeaker on a pole, two U-bolts and nuts should be used to clamp around the pole and bolt through the four holes on the back of the FastMount bracket. Spring washers or blue thread lock are recommended to ensure the nuts do not work loose through the vibration of the loudspeaker.



PIVOTING THE LOUDSPEAKERS

You can rotate the loudspeaker in the bracket to direct the sound towards the listeners.

1. Unlock the slide locks on the loudspeaker pivots by moving them towards the rear of the loudspeaker.
2. Rotate the loudspeakers to the desired position.
3. Lock the slide locks by moving them towards the front of the loudspeaker.

GRILLE AND LOUDSPEAKER PAINTING

Sonance Professional Series Surface Mount High Output loudspeakers feature a tough polypropylene enclosure that can be painted. Sonance recommends using a weather-resistant outdoor paint and a spray gun.

1. If they have already been installed, remove the grilles from the loudspeakers.
2. To protect the loudspeaker driver units during painting, place the grilles on a piece of cardboard and trace around their outlines. Then cut the cardboard just inside of the trace line and fit these “paint plugs” into the loudspeakers’ baffles. Be careful not to damage the driver components while fitting the paint plugs.
3. Prime the grille with a metal primer/bonder in a spray can. Carefully follow the manufacturer’s directions on the can.
4. We recommend using water-based latex paint on the grilles. Thin the paint with a proper thinning agent to a ratio of 1:1 paint-to-thinner, and strain it through a standard mesh strainer to remove any lumps.

IMPORTANT: Due to its increased durability, oil-based paint should be considered for Professional Series Loudspeakers that are installed outdoors.

5. Use a small touch-up gun or cap-spray gun with a #3 tip for painting.
 - Set the nozzle with a medium to wide fan.
 - Set the pressure regulator to 60psi.
 - Lightly spray the front of the grille in three quick strokes from approximately 10” away.
 - Let the paint set for a minute, then turn the grille 90 degrees and lightly spray the grille again in three quick strokes. Repeat this step until all four sides of the grille have been evenly painted.
6. While the paint is still wet, inspect the grille and make sure that none of the grille perforations are filled with paint. If any are, use compressed air to blow the paint out of the perforations.

INSTALLING THE LOUDSPEAKERS

The best performance is obtained by placing the left and right loudspeakers at ear level, 6-10ft apart. The loudspeakers should be facing the listening area. If you are mounting the loudspeakers above or below ear level, pivot them up or down to direct the sound towards the listeners.

1. Remove the loudspeakers from the mounting brackets by lifting the tabs on the front panels outward and away from each other (see Figure 4).

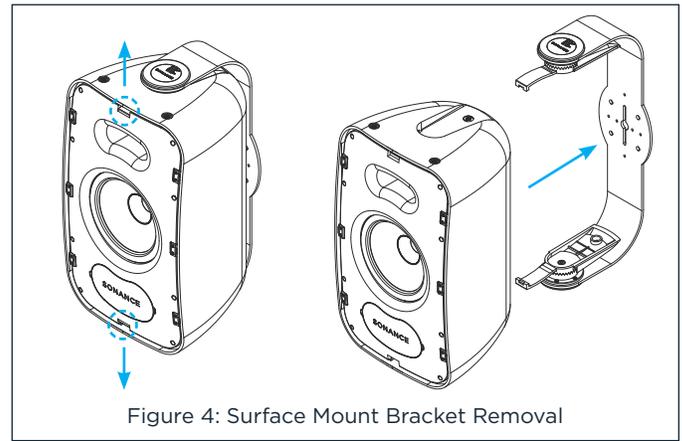


Figure 4: Surface Mount Bracket Removal

2. Run the loudspeaker wires from the amplifier to the loudspeaker locations and through the holes in the mounting brackets.

NOTE: Be sure to leave enough wire at the loudspeaker location to feed through the tunnel in the loudspeaker enclosure and wire to the Euroblock Connector on the front.

3. Attach the mounting bracket to the mounting surface using hardware (not included) that is appropriate for the type of surface. Stainless hardware is recommended.
4. If the installation requires that the loudspeakers be mounted on poles you can attach the bracket to poles using appropriately sized U-bolts (71mm/2.8” spacing, not included, see Figure 5).

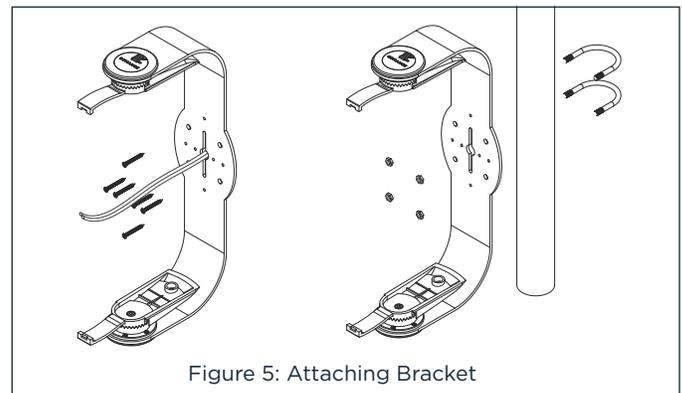


Figure 5: Attaching Bracket

5. Feed the loudspeaker wires from the brackets into the wire entry grommets on the backs of the loudspeakers, through the wire tunnels and out the openings on the loudspeakers’ front panels (see Figure 6 and 7).
 - The grommet forms a water-resistant seal around the loudspeaker wire.
 - The grommet has one through hole and one pilot dimple. If an input and output cable are required for installation, use a sharp awl to punch an additional through hole in the pilot divot. This will allow for two cables to pass through the grommet and remain water-tight.
 - Make sure there is enough slack in the wire to allow the loudspeaker to pivot on the bracket.

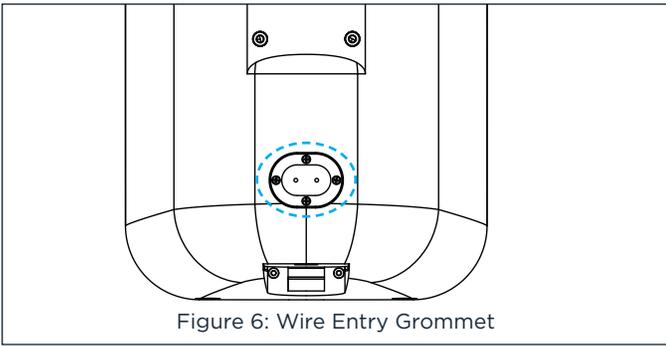


Figure 6: Wire Entry Grommet

- Slide the loudspeakers onto the brackets until the locks snap into place (see Figure 7).

NOTE: Be sure that the bracket clips snap completely into place to prevent any blockage within the loudspeaker perimeter where the grille is to be inserted. Pull on the front of the cabinet to ensure the clips are fully sealed and that the bracket is secure.

Pull enough wire through the front of the loudspeaker to allow connection to the terminals.

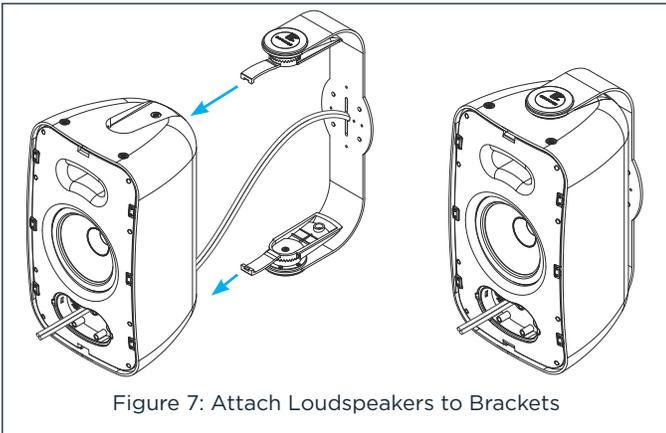


Figure 7: Attach Loudspeakers to Brackets

- Connect the wires from your amplifier to the input connector.
- Strip approximately 0.1875" (5mm) of the insulation off each wire. Insert the wire into the correct square opening on the connector. Use a small flat head screwdriver to tighten the corresponding screw to secure the wire.

When using multiple loudspeakers you can connect the loudspeakers either in parallel or in the loop through method as shown (see Figure 8 and 9).

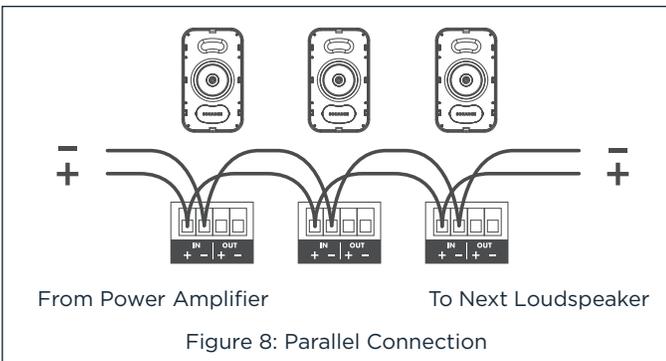


Figure 8: Parallel Connection

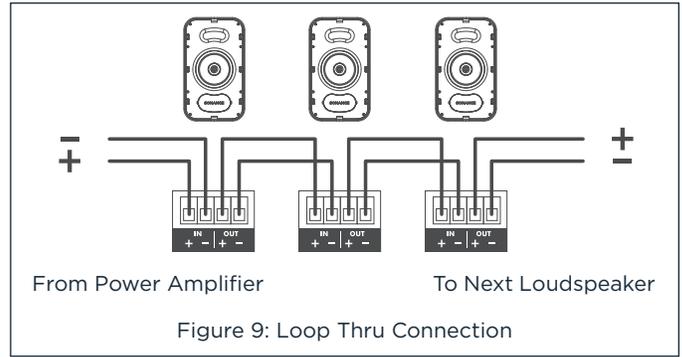


Figure 9: Loop Thru Connection

- Install the appropriate dispersion assembly. Sonance Professional Series High Output Loudspeakers feature a magnetic interchangeable collar/horn assembly that can be swapped out to achieve the desired coverage (see Figure 10). For wide coverage applications, leave the collar assembly in place (comes installed as default). For narrow coverage applications, remove the collar and install the horn.

NOTE: The selector switch located on the baffle must be assigned to the appropriate position to match the installed assembly (see Figure 11).

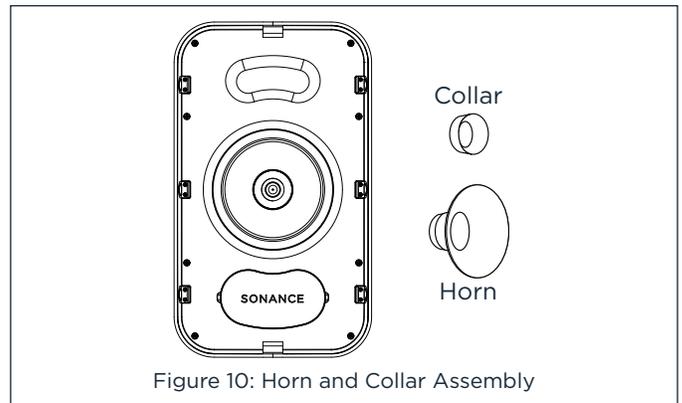


Figure 10: Horn and Collar Assembly

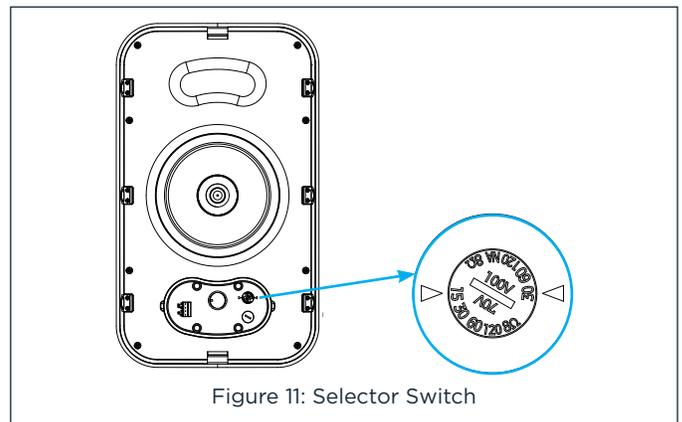


Figure 11: Selector Switch

WIDE/COLLAR

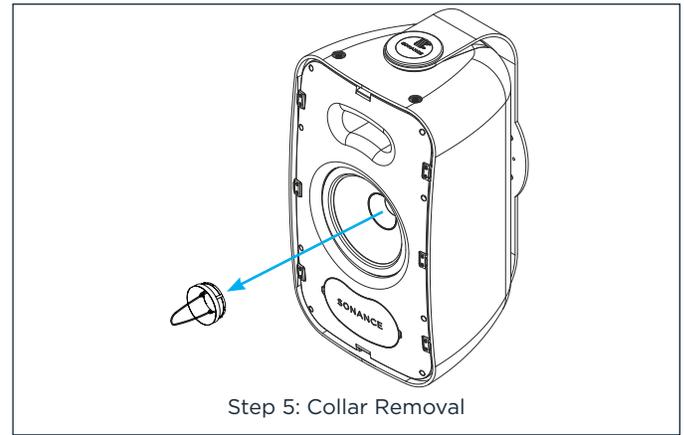
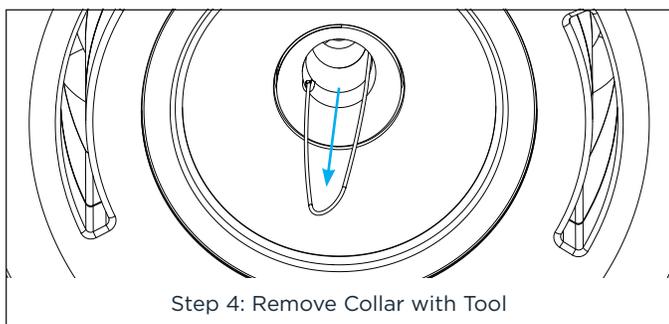
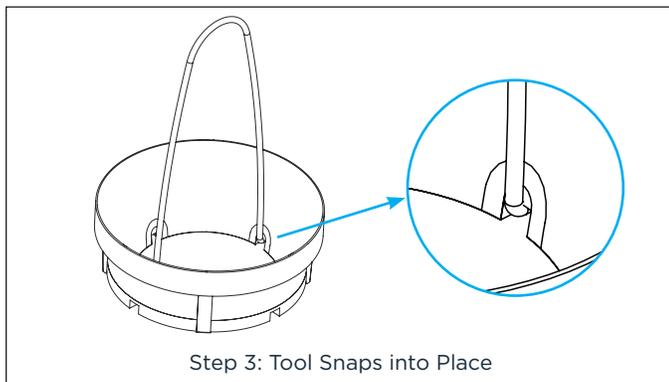
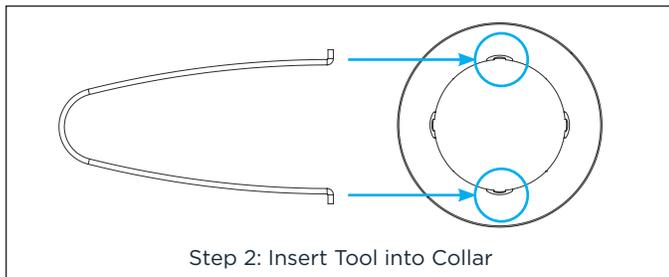
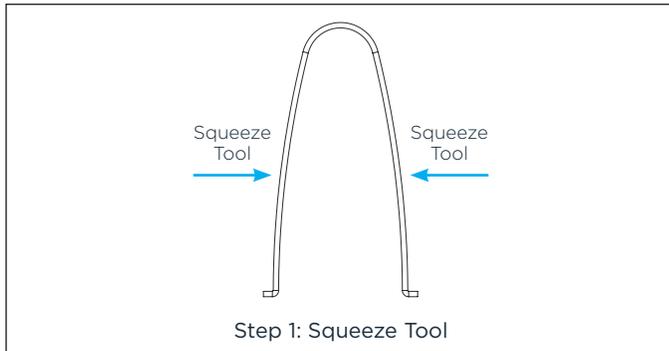
This Professional Series High Output Loudspeaker ships with the collar installed.

- For applications requiring wide loudspeaker coverage, no assembly changes are needed.
- Ensure the selector on the front baffle is in the "WIDE/COLLAR" position.

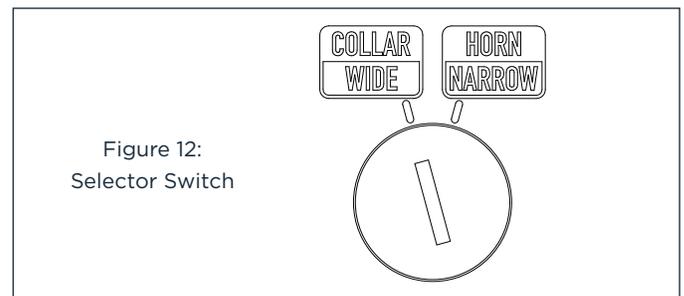
NARROW/HORN

For applications requiring narrow loudspeaker coverage, the collar will need to be removed for the horn to be installed. Sonance includes a collar claw removal tool for easy collar removal.

- Identify the four slots on the collar marked by blue rings.
- Align the collar removal tool with two of the slots and snap the tool into place.

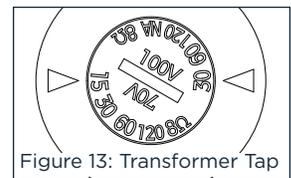


- Then, pull up to remove the collar. The collar can be discarded unless the installer plans to relocate the loudspeaker in the future, in which case the collar can be reserved.
- The horn attaches magnetically. Align the horn into position and it will snap into place.
- Switch the selector on the front baffle to the "NARROW/HORN" position.



NOTE: If removal of the horn is required, no tool is needed. The horn attaches magnetically and can be installed and removed by hand.

- Determine the proper wattage setting for each loudspeaker in the installation and set each loudspeaker's transformer tap selector (see Figure 13).



SETTING TRANSFORMER TAP SWITCH

Sonance Professional Series Surface Mount High Output Loudspeakers are factory set for maximum output when used with a Sonamp DSP 2-750 MKIII or another 70V/100V amplifier. No additional work is necessary if the loudspeakers are operating in 70V or 100V and can run at their full volume capacity. Applications for changing the tap switch from factory default:

- Loudspeakers are to be installed in sensitive areas and need to be "tapped down" for lower volume.
- More loudspeakers are needed to be added to a 70V/100V amplifier already operating at full capacity.
- A small zone is to be driven by an 8 ohm amplifier.

8 OHM TAP SETTINGS

Aligning the values on the dial with the arrow indicators on either side to the “8 ohm” setting bypasses the internal transformer for operation with low impedance amplifiers.

70V TAP SETTINGS

Align the arrow positioned with the 70V values to the desired wattage setting. Turning the dial one click stop in either direction increases or decreases the loudspeaker’s input power.

100V TAP SETTINGS

Align the arrow positioned with the 100V values to the desired wattage setting. Turning the dial one click counter clockwise decreases the speaker’s input power.

FITTING THE TERMINAL COVER

Fit the wiring terminal cover into the recess in the loudspeakers’ front panel (see Figure 14). The cover should fit tightly, but can be removed and replaced if the loudspeaker needs to be disconnected.

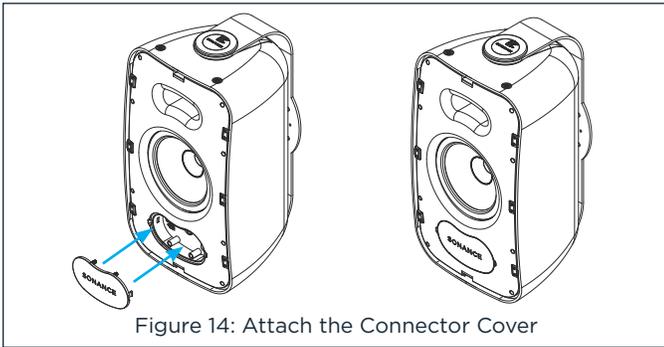


Figure 14: Attach the Connector Cover

FITTING AND REMOVING THE GRILLE

1. When installing the grille, align the grille trim skirt with the groove in the enclosure.
2. To lock the grille in place apply pressure at the locations of the six grille retention clips. An audible click should be heard as the grille locks into place.

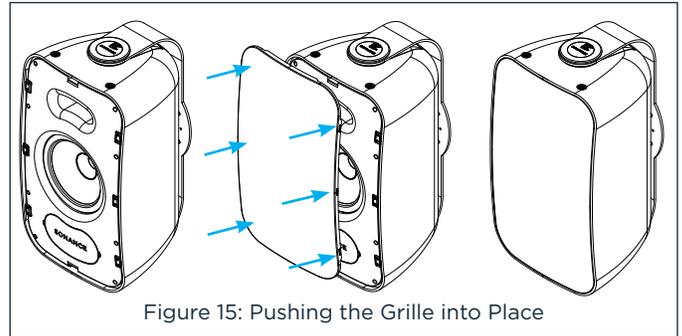


Figure 15: Pushing the Grille into Place

NOTE: To remove the grille, we suggest starting in any one of the four corners using a grille pulling tool (not included). Repeat for the remaining three corners, being careful not to bend the grille skirt. If the grille skirt does become bent during removal, it can be straightened by carefully bending it back into its original shape.

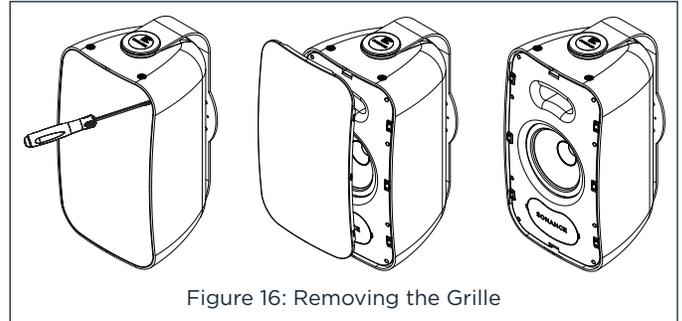


Figure 16: Removing the Grille

PS-S85T TECHNICAL SPECIFICATIONS

SKU	40236 Black Each 40235 White Each
Transducers LF Drive	8" (203mm) Aluminum Cone, Santoprene Surround, Ferrite Magnet, 60.55mm Voice Coil
Transducers HF Driver	1.4" (36mm) Aluminum Dome Compression Driver, Neodymium Magnet, 36mm Voice Coil, 1500Hz Crossover Frequency, 1" (25mm) Exit Size
Frequency Range (-10dB) *	36.6Hz - 25kHz
Frequency Range (+/-3dB) *	41.4Hz - 20kHz
Long Term Power Handling (IEC) ‡	150 Watts (600 Watts Peak), 100 Hours
Program Power	300 Watts (1200 Watts Peak), Two Hours
Sensitivity (2.83V/1M) §	93dB SPL
Long Term - Maximum SPL ‡	114dB (120dB Peak)
Program Power - Maximum SPL ‡	117dB (123dB Peak)
Rated Impedance	8 ohm Bypass
Transformer Taps (8 ohm Bypass)	70V: 120W, 60W, 30W, 15W 100V: 120W, 60W, 30W
Collar Coverage Pattern 1kHz to 10kHz †	120 Degrees Axis Symmetric
Horn Coverage Pattern 1kHz to 10kHz †	80 Degrees Axis Symmetric
Collar Directivity Factor (Q)	5.7 (Average 1kHz to 16kHz)
Horn Directivity Factor (Q)	8.65 (Average 1kHz to 16kHz)
Collar Directivity Index (DI)	7.5dB (Average 1kHz to 16kHz)
Horn Directivity Index (DI)	9dB (Average 1kHz to 16kHz)
Ingress Protection	IPX4
Operating Temperature Range	-40 F (-39.96 C) to 140 F (60 C)
Agency Listings	UL 1480A, CSA-C22.2 No.205
Conformity	NFPA70, NFPA 90A
Enclosure and Baffle Material	Polypropylene Plastic (UL94V-0)
Grille Material	Steel
Capture Thickness	0" to 2.12" (0mm to 53.84mm)
Suspension Points	Top, Bottom, and Back
Enclosure Cubic Volume	0.83 Cubic Feet (23.5 Cubic Liters)
Enclosure/Port Tuning	41.1Hz
Input Connector	Four Pin, Euroblock with Loop Output Connections
Product (no C-Bracket) (HxWxD)	19.47" x 11.57" x 10.25" (494.5mm x 293.9mm x 260.3)
Product (with C-Bracket) (HxWxD)	20.86" x 11.57" x 11.02" (529.8mm x 293.9mm x 279.9)
Product Weight (no Grille)	27.76 lbs. (12.59kg) EA
Product Weight (with Grille)	29.3 lbs. (13.29kg) EA
C-Bracket Weight	3.31 lbs. (1.5kg) EA
Shipping Weight	45.67 lbs. (20.71kg) PR

INCLUDED ACCESSORIES

- (1) Loudspeaker Grille
- (1) FastMount Bracket
- (1) Wiring Terminal Cover
- (1) Euroblock Wire Connector
- (1) Variable Dispersion Horn
- (1) Collar Removal Tool
- (4) Rubber Mounting Point Covers

OPTIONAL ACCESSORIES

- PS-S85T Replacement Grille White (EA) | 40245
- PS-S85T Replacement Grille Black (EA) | 40246
- PS-S85T FastMount Bracket White (PR) | 40247
- PS-S85T FastMount Bracket Black (PR) | 40248
- PS-S85T Omni Mount Bracket White (EA) | 40249
- PS-S85T Omni Mount Bracket Black (EA) | 40250
- PS-x85 Horn/Collar Kit (EA) | 40251

* In half space | † Average 1 kHz to 10 kHz | ‡ IEC 268-5 standard, with 6 dB crest factor | § Measured in half space, ave 100 Hz - 10 kHz | UL evaluated frequency range of 50-20kHz

CERTIFICATIONS

SAFETY AGENCY COMPLIANCE

Sonance Professional Series Loudspeaker model PS-S85T meets the following standards:

NFPA-70 National Electric Code 1996, article 300-22(c).

NFPA-90A Installation of Air Conditioning and Ventilation Systems, section 2-3.10.1 (a), exception 3.

UL-1480A

IMPEDANCE 8 OHMS

MAX RATED POWER 150 WATTS

SUITABLE FOR USE IN AIR HANDLING SPACES

LISTED GENERAL SIGNALING EQUIPMENT SPEAKER



TECHNICAL ASSISTANCE AND SERVICE

The Technical Assistance Department at Sonance is available at (949) 492-7777 to answer any questions concerning the operation and installation of your loudspeakers between the hours of 7:00 AM and 5:00 PM Pacific time, Monday through Friday, except holidays.

In the event your unit should need repair or service, you may return the unit to your authorized dealer or use the following guidelines:

Please keep original packaging when possible.

1. Be prepared to state the model number and / or serial number, date of purchase, and dealer's name and address when calling.
2. Contact Sonance directly at (949) 492-7777 or at www.sonance.com

YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR UNIT.

3. If you are returning the product directly to Sonance, call us to obtain a return authorization number (RMA #) before shipping.
4. Ship the product via United Parcel Service, Federal Express, or other package delivery service. Please do not use the U.S. Postal Service.

Write the Return Authorization Number on the shipping label. Do not write it on the outside of the box.

Ship to:

Attn: Quality Assurance Department
Sonance
11016 Mulberry Ave, Suite B
Fontana, CA 92337

LIMITED FIVE (5) YEAR WARRANTY

Sonance warrants to the first end-user purchaser that this Sonance-brand product (“Product”), when purchased from an authorized Sonance Dealer/Distributor, will be free from defective workmanship and materials for the period stated below. Sonance will at its option and expense during the warranty period, either repair the defect or replace the Product with a new or re-manufactured Product or a reasonable equivalent.

EXCLUSIONS

TO THE EXTENT PERMITTED BY LAW, THE WARRANTY SET FORTH ABOVE IS IN LIEU OF, AND EXCLUSIVE OF, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY SONANCE. ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, IMPLIED WARRANTY OF FITNESS FOR USE, AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED.

No one is authorized to make or modify any warranties on behalf of Sonance. The warranty stated above is the sole and exclusive remedy, and Sonance’s performance shall constitute full and final satisfaction of all obligations, liabilities, and claims with respect to the Product.

IN ANY EVENT, SONANCE SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, ECONOMIC, PROPERTY, BODILY INJURY, OR PERSONAL INJURY DAMAGES ARISING FROM THE PRODUCT, ANY BREACH OF THIS WARRANTY, OR OTHERWISE.

This warranty statement gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion of implied warranties or limitations of remedies, so the above exclusions and limitations may not apply. If your state does not allow disclaimer of implied warranties, the duration of such implied warranties is limited to period of Sonance’s express warranty. Your Product Model and Description: PS-S85T. Warranty Period for this Product: Five (5) years from the date on the original sales receipt or invoice or other satisfactory proof of purchase. Additional Limitations and Exclusions from Warranty Coverage: The warranty described above is nontransferable, applies only to the initial installation of the Product, does not include installation of any repaired or replaced Product, does not include damage to allied or associated equipment which may result for any reason from use with this Product, and does not include labor or parts caused by accident, disaster, negligence, improper installation, misuse (e.g. overdriving the amplifier or speaker, excessive heat, cold or humidity, mishandling, etc.), or from service or repair which has not been authorized by Sonance. Obtaining Authorized Service: To qualify for the warranty, you must contact your authorized Sonance Dealer/Installer or call Sonance Customer Service at (949) 492-7777 within the warranty period, must obtain a return merchandise number (RMA), and must deliver the Product to Sonance shipping prepaid during the warranty period, together with the original sales receipt, or invoice or other satisfactory proof of purchase.