REL

ACOUSTICS LTD

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REL
ACOUSTICS LTD

Operating Instructions for the

Serie S
Sub-Bass System

Caution Marking Explanation

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Instructions

1 Read all of these instructions.

2 Save these instructions for future use.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with automotive polish and micro fiber cloth.

7 Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult and electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12  Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rail or moisture, does not operate normally, or has been dropped.

15 minimum distances 10cm around the apparatus for sufficient ventilation;

16 the ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.;

17 no naked flame sources, such as lighted candles, should be placed on the apparatus;

18 attention should be drawn to the environmental aspects of battery disposal;

19 the use of apparatus in moderate climates.

20 Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on apparatus.

The mains plus is used as disconnect device. The mains plug of the apparatus should not be obstructed OR should be easily accessed during intended use. To be completely disconnected from the power input, the mains plug of the apparatus shall be disconnected from the mains.

An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.

Design Safety

These apparatus are supplied with a detachable mains cord. For 230V operation a 8A fuse is fitted in the socket of the S/850 and a 5A fuse is fitted in the socket of the S/550, for 120V operation a 15A fuse is fitted for the S850 and a 10A fuse is fitted for the S/550. Should the fuse need to be replaced use a similar rated fuse approved to ASTA or BSI 362 standards. Do not use without the fuse cover in place. Replacement fuse covers are available from your distributor.

Attention Explication Marquage

L'éclair avec le symbole de pointe de flèche dans un triangle équilatéral est destiné à alerter l'utilisateur de la présence de non isolée tension dangereuse à l'intérieur de l'enceinte du produit qui peut être d'une ampleur suffisante pour constituer un risque d'électrocution pour les personnes.

Le point d'exclamation dans un triangle équilatéral est destiné à alerter l'utilisateur de la présence d'instructions dans la documentation accompagnant l'appareil exploitation et de maintenance (entretien).

Informations Importantes Relatives a la Securite

1 Lisez attentivement ces instructions.

2 Conservez ces instructions.

3 Respectez tous les avertissements.

4 Suivez toutes les instructions.

5 Ne pas utiliser cet appareil près de l'eau.

6 Nettoyez seulement avec du vernis automobile et tissu microfibre.

7 Installer conformément aux instructions du fabricant.

8 Ne pas installer près de sources de chaleur telles que des radiateurs, registres de chaleur, poêles ou autres appareils (y compris les amplificateurs) qui produisent de la chaleur.

9 Ne pas contourner le dispositif de sécurité de la prise de terre. Une fiche de terre a deux lames et une troisième broche de mise à la terre. La troisième broche est fournie pour votre sécurité. Si la fiche fournie ne rentre pas dans votre prise, consultez un électricien pour le remplacement de la prise obsolète.

10 Protégez le cordon d'alimentation ne soit piétiné ou pincé, en particulier au niveau des fiches, des prises de courant, et le point de sortie de l'appareil.

11 Utilisez uniquement des fixations / accessoires spécifiés par le fabricant.

12  Utilisez seulement avec un chariot, stand, trépied, support ou table spécifié par le fabri cant, ou vendu avec l'appareil. Lorsque vous utilisez un chariot, soyez prudent lorsque vous déplacez l'ensemble
chariot / appareil pour éviter les blessures en cas de chute.

13 Débranchez cet appareil pendant un orage ou lorsqu'il est inutilisé storsm pour de longues périodes de temps.

14 Confiez toute réparation à un personnel qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque façon que ce cordon d'alimentation ou la fiche est endommagé, du liquide a été renversé ou des objets sont tombés dans l'appareil, l'appareil a été exposé à rail ou à l'humidité, ne fonctionne pas normalement, ou a été échappé.

15 10cm distance minimale autour de l'appareil pour une aération suffisante;

16 il convient que l'aération ne soit pas gênée par l'obstruction des ouvertures d'aération par des objets tels que journaux, nappes, rideaux, etc.;

17 il convient de ne pas placer sur l'appareil de sources de flammes nues, telles que des bougies allumées;

18 il convient d'attirer l'attention sur les problèmes d'environnement dus à la mise au déchet des piles;

19 si l'appareil est destiné à être utilisé sous un climat tempéré.

20 les batteries ne doivent pas être exposées à une chaleur excessive telle que celle du soleil, d'un feu ou d'origine

Attention: Tout changement ou modification non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

Avertissement
Cet article est lourd. Pour éviter tout risque de blessure, prendre soin lors de la manipulation.

L'appareil ne doit pas être exposé à des éclaboussures et aucun objet rempli de liquide, comme des vases, ne doit être placé sur l'appareil.

Les conduites Plus est utilisé comme dispositif de déconnexion. La fiche de l'appareil ne doit pas être obstruée OU doit être facilement accessible pendant l'utilisation. Pour être complètement déconnecté de l'alimentation électrique, le cordon d'alimentation de l'appareil doit me débranché.

Un appareil avec une borne de terre doit être branché sur une prise de courant en étant relié à la terre.

Sécurité Design
Ces appareils sont fournis avec un cordon secteur détachable. Pour le fonctionnement en 230V, un fusible de 8A est installé dans la prise du S/850 et un fusible de 5A dans la prise du S/550, pour un fonctionnement en 120V, un fusible de 15A est installé pour le S/850 et un fusible de 10A pour le S/550. Si le fusible doit être remplacé, utilisez un fusible de même calibre approuvé selon les normes ASTA ou BSI 362. Ne pas utiliser sans le couvercle de fusible en place. Des couvre-fusibles de rechange sont disponibles chez votre distributeur.

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: ***This equipment has been tested and found to comply with the limits for a Class B digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.***

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Dear Friend and Valued Customer,

SERIE S: The Third Generation

Congratulations on your purchase of a new Serie S. In many respects, this is the most difficult range for us to design. Expectations for this long-standing family are incredibly high. Serie S owners demand performance, precision of assembly, and output levels approaching those of our flagship Reference Serie S.

REL's Design Team takes this brief seriously and, with this latest generation, we've come closer than ever to delivering a near- Reference experience. Output has increased some 3 to 6 dB, depending upon model, while speed and control are improved across the entire range. These gains are driven by a new family of Class D power amplifiers offering greater transient impact and weight than their predecessors.

As with race cars, when the engine is upgraded, everything else must be examined and improved. Our drivers underwent extensive redesigns to handle the increased output, which in turn required far more capable passive drivers. Once the driver challenges were solved, we could hear performance elements that begged for more transparency – prompting us to adopt the more transparent polypropylene capacitors first used in the No. 32 and No. 31 Reference models. The results have been extraordinary.

Both S/850 and S/550 benefit from these advancements. As with the previous range, S/550 is identical in quality to its larger stablemates, but substitutes a 10" driver and 500 watts because not every system and every room need more. Because not every system and every room need more. The build quality is, in every way, identical. The S/850 exceeds the output of the previous range's Carbon Special and offers performance for underpinning many high end floor standing speakers in larger rooms. Its low bass extension has improved as has its transparency and openness. As always, the driver's mass has been kept remarkably low and the self-damping necessary for precise stopping-and-starting is improved over the prior range.

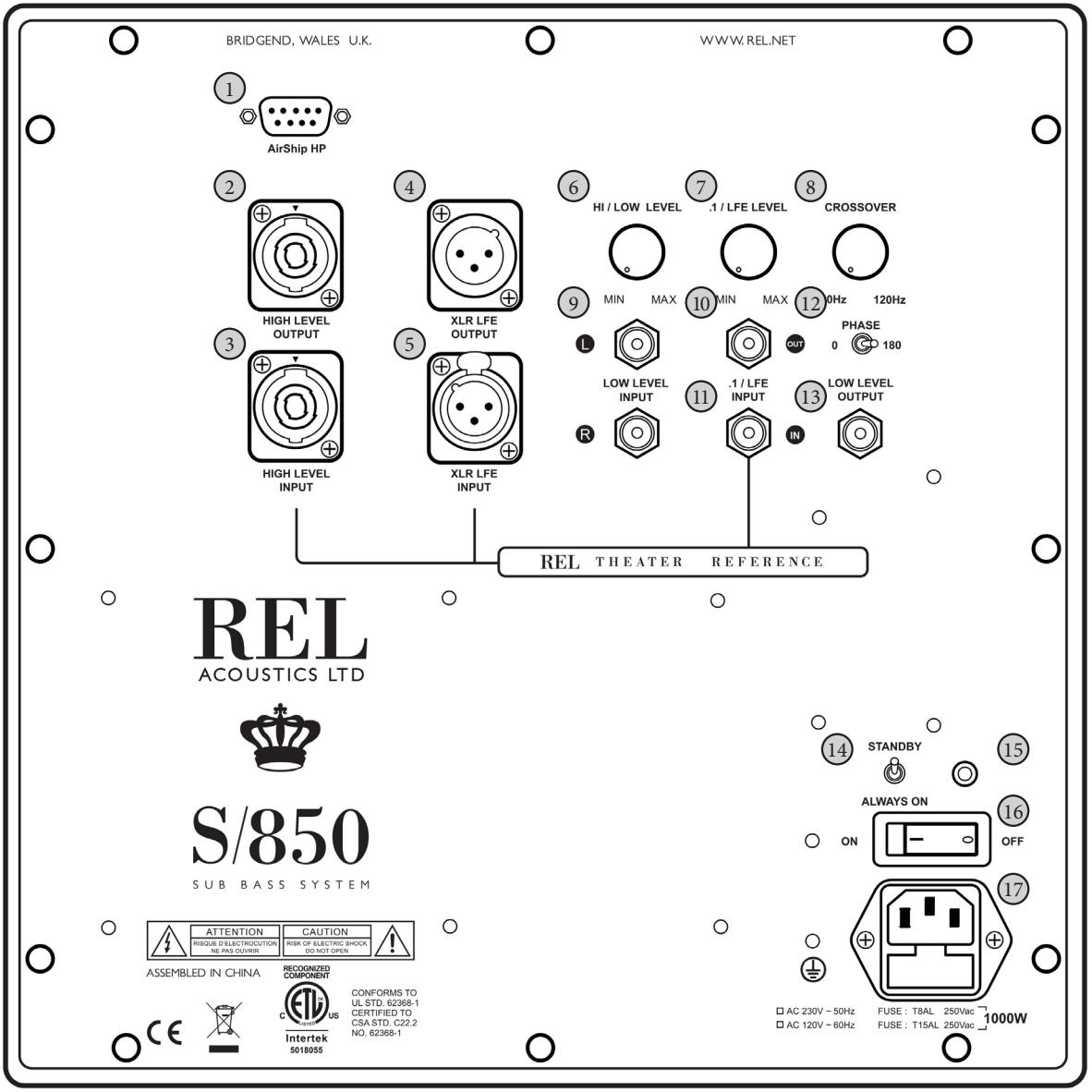
Serie S continues to deliver more of what our customers look to in our Reference products, but at a fraction of the price. We hope you enjoy them as much as we enjoyed designing them.

Sincerely,

John, Justin, Alex and Jacob

The REL Product Development Team

REL SerieS Rear Panel Connection Legend



1 Airship Direct input connector: Connection for external REL AirShip wireless receiver.

2 High Level Output (Neutrik Speakon): Used to connect or “daisy chain” another REL Serie S in tandem.

3 High Level Input (Neutrik Speakon): Used to connect to the main front amplifier speaker terminals.

4 .1/LFE Balanced Output: Balanced (XLR connector) version of .1/LFE Output. For use only with fully balanced cables.

5 .1/LFE Balanced Input: Balanced (XLR connector) version of .1/LFE Input. For use only with fully balanced cables.

6 Hi/Low Level: Volume control for High/Low Input. Use to adjust output when using either High Level or Low Level input.

7 .1/LFE Level: Used to adjust output level when using .1/LFE input from a surround-sound processor.

8 Crossover: Used to adjust crossover frequency of Hi/Low Level channel. Variable between 20-120Hz.

9 Left & Right Channel Low-Level RCA Input: Used to connect low-level signals to the sub-bass system from the output of a preamplifier, integrated amplifier or receiver. (For home cinema use, use .1/LFE input).

10 .1/LFE RCA Output: Used to connect or “daisy chain” another REL Serie S in tandem

11 .1/LFE RCA Input: Used to connect to the .1/LFE output of a surround-sound processor.

12 Phase: Used to set phase 0-180 degrees.

13 Low-Level RCA Output: Used to connect or “daisy chain” low-level signal to another REL Serie S in tandem

14 Standby/ Always On Switch: Used to enable standby mode.

15 Power Pilot Light: Power On/Off indicator.

16 Power On/Off Switch: Use to turn unit on or off.

17 .IEC Mains Socket: Fused mains (AC) input socket that accepts detachable power cord.

Connectivity and Functionality

High Level Input

Stereo Amplifier: Connections should be made to the same positive (usually RED) binding posts on your main amplifier as are your main speakers. Please investigate the design of the amplifier(s) you are using because balanced differential and Class D designs require special connections*. For all amplifier classes (Class A/B, Class D, G or H or Balanced Differential) design amplifiers, connect the red wire to amplifier main right speaker + (red) terminal, yellow wire to amplifier main left speaker + (red) terminal.Black (Ground) wire should connect to any chassis ground bolt or screw that results in a solid ground connection that results in no hum. Plug the Neutrik® Speakon® plug into the HI LEVEL Speakon® socket.

Mono Block Amplifiers: A single Serie S unit should not be connected to a pair of mono block amplifiers as the ground differential resulting from this will, at a minimum, run the risk of creating hum from a ground loop. In some instances, this difference in ground potential can lead to oscillation. Please always use dual REL Serie S when using mono block amplifiers.

*Note: Incorrectly connecting the REL High Level cable because of failure to identify the Class of amplifier can lead to damage to your REL. If in doubt, please contact the manufacturer of your amplifier and request information to determine the correct type of amplifier class that is used.

.1/LFE Input

This requires a RCA to RCA or XLR to XLR cable and is a dedicated true .1/LFE channel. This circuit therefore eliminates the normal Naturalsound RollOff™ Crossover and passes the .1 low-level signal through with only the required 120Hz fourth-order filter.

Low-Level Input

The RCA Low Level Stereo inputs allow for conventional connection from a preamplifier. Plug one end of the RCA cables into the LOW LEVEL INPUT jacks of the REL and the other end into the left or right channel output of your preamplifier or powered speaker.

Phase Switch

Used to set phase. Phase selection affects High Level, Low Level and .1/LFE inputs.

PHASE SELECTION AFFECTS BOTH HIGH AND LOW LEVEL INPUTS

Crossover is always engaged for high and low level inputs. The .1/LFE signal does not pass through the crossover circuit.

Connecting Up

Always switch off your system before disconnecting any wires.

To increase the versatility of connection, the Serie S models have three separate and distinct types of inputs, although only two will be used as one must decide between High Level and Low Level inputs. They are:

1 High Level Input connection which uses a Neutrik Speakon terminal.

2 .1/LFE input consisting of your choice of RCA or XLR connectors.

3 Low Level stereo or mono (if using stereo pairs or Line Arrays of Serie S RELs) inputs. These include RCA connections for stereo input, although if using stereo pairs or Line Arrays of Serie S RELs only one input per channel need be used. This is to facilitate use with both two-channel stereo systems as well as AV surround sound systems.

The High Level, unbalanced, dual-channel (stereo) input is via a Neutrik® SpeakOn® connector and is designed to accept the stereo (two-channel) signals from the speaker terminals of your receiver, integrated amplifier or basic amplifier. This has the advantage of ensuring that your subwoofer receives precisely the same signal as the main speakers, which means that the character of the bass from the main system is carried forward into the Sub-Bass System.

This is a very important point which, when combined with REL's Naturalsound™ input filters, ensures far superior system integration of your REL Sub-Bass System with the main system.

URGENT NOTE: Plugging in the REL High Level Cable: Prior to doing so please STOP and carefully examine the end of the cable's connector. Identify the keyway on the end of the plug and take care to align the keyway with the matching slot on the rear panel SpeakOn High Level Input. To engage the Neutrik® Speakon® plug, insert it carefully into the Speakon terminal on the rear panel of your REL and rotate it clockwise until it clicks.If any noticeable resistance is encountered, please stop, reexamine the orientation of the cable's plug to the Speakon terminal on your new REL and take care to match the keyway and slot before damage occurs.

How to Properly Detach the REL High Level Cable from the REL Subwoofer: To remove the Neutrik® Speak-on® plug, firmly grip the body of the plug, placing thumb on serrated chrome lever. Slide lever rearward while rotating plug counterclockwise 1/4 turn and withdraw.

XLR and RCA connections are provided for input from the .1/LFE channel of a home cinema processor.

HIGH LEVEL and .1/LFE inputs can and should be used simultaneously in Theatre Applications. The benefits are two-fold when used with a home cinema processor set to Full Range or as low as your processor or receiver will permit. The .1/LFE input reproduces the .1/LFE channel, and the High Level connection underpins the main front speakers. The main front speakers should be set to the 'large' or full range if available option on the AV processor. See "Theatre Applications" for more information.

There are two RCA sockets for low-level Left and Right channel connection to the output of a stereo preamplifier or receiver. These may be used in cases where High Level input is not an option.

REL Set-Up Made Simple

REL products are not traditional subwoofers, but true Sub-Bass Systems. A REL is designed to augment the performance of "full range" speaker systems in order to provide, in certain cases, linear response below 15 Hz. Therefore, for the moment, please set aside everything you've been taught about subwoofers and how they are integrated into a stereo or home cinema system. REL Sub-Bass Systems set-up and positioning differs from conventional subwoofers. A REL will take advantage of physics and room acoustics to provide deep pressurization as no traditional subwoofer can. It is important that you bring to the set-up process a willingness to do things a little differently to obtain these superior results. The end result of your labor will be an utterly seamless integration of true deep bass to a sound system, regardless of the main speakers' low bass capability.

Basic set-up should take no more than ten to fifteen minutes to accomplish once connected.

Two Things Before You Begin

1 It is helpful to know that you will almost always connect the REL to the input on the rear panel labeled "HIGH LEVEL INPUT." This connection is made using the supplied 32' 10" (10 meters) cable, the bare leads of which connect to the speaker output terminals of the power amplifier. The easy and foolproof connection at the REL is done with a Neutrik® Speakon® connector. The purpose of connecting to the speaker output terminals is one of the unique secrets of REL's success. By connecting to the High Level input on the REL from the amplifier, you build forward the sonic signature of your main system, including the tonal balance and timing cues of the entire electronics chain. In this way, the REL is fed the exact signal that is fed to the main speakers.

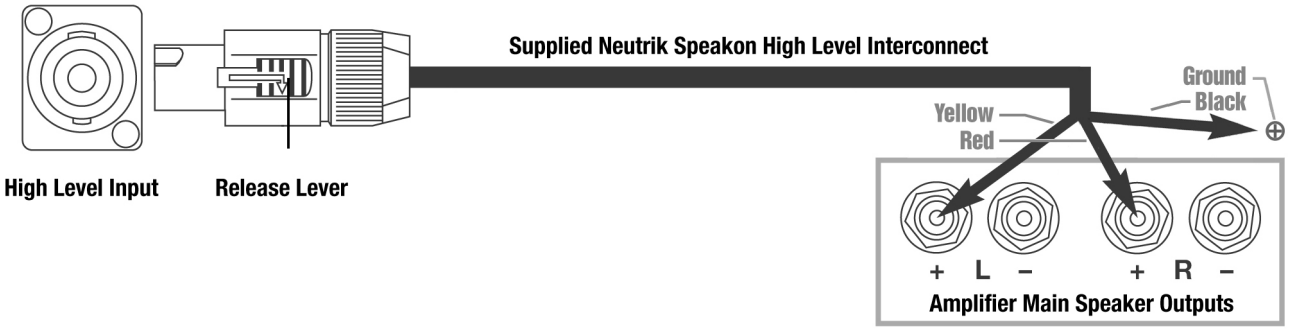
2 When possible, the REL should be placed in one of the corners behind the speakers. Remember, we are dealing with true LOW bass pressurization with RELs. Low bass pressurization below 40Hz is best derived from corner placement, where the most linear and efficient low bass can be produced because the subwoofer is able to take advantage of the tangential (corner-to-corner) axis which is typically the longest axis in a room.

Connecting and Setting Up

High Level connection, using the enclosed cable with the Neutrik® Speakon® connector, is always the first choice. This connection can be made without affecting the performance of the amplifier because the REL's amplifier has very high input impedance, in effect producing NO additional load on the rest of your system.

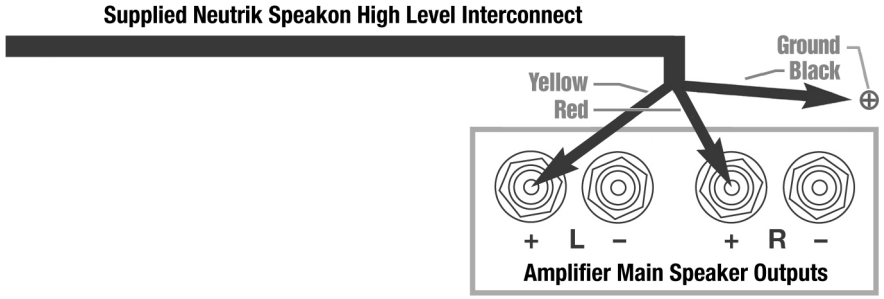
• The standard High Level hook up procedure is attaching the red wire to the amplifier's right positive speaker output terminal; attach the yellow wire to the amplifier's left positive speaker output terminal; attach the black wire to whichever of the amplifier's chassis ground screws or bolts is convenient; plug the Speakon® connector into the Sub-Bass System's HIGH LEVEL INPUT.

Standard High-Level



• For differential (i.e. fully balanced) stereo amplifiers using one REL, simply use the standard connecting scheme of connection to an exposed chassis ground screw or bolt. It may also be allowed to “float” or hang down without connection to ANY terminal. Should hum occur using this method, please return to connecting to chassis ground or an unused RCA connector on the rear of a preamp or amplifier. Please contact your dealer should there be any questions concerning this or any other hookup procedure.

Differential (i.e. Fully Balanced)



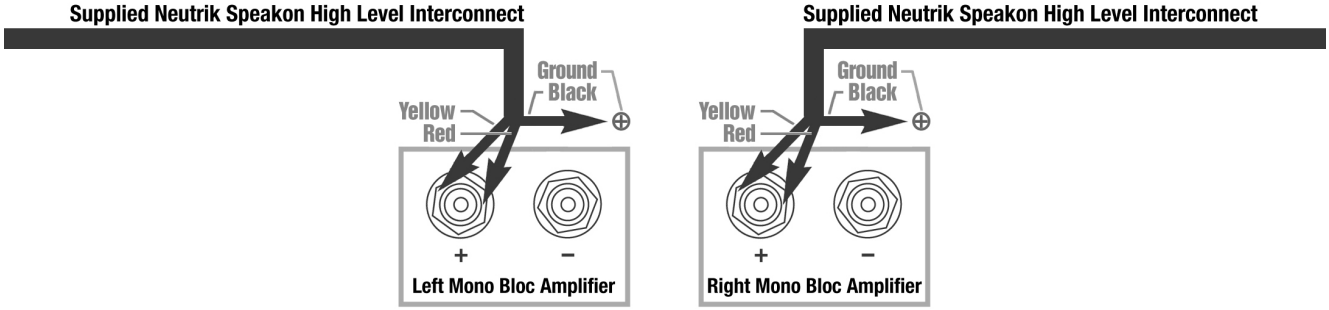
NOTE: ***Serie S models are equipped with internal circuitry to allow connection to many Class-D (digital) amplifiers.***

Warning: Do NOT connect the Black wire to the main Class D power amplifier’s speaker ground terminal. Some Class D amplifiers produce positive voltage at the amplifier’s speaker ground terminal (black) and connecting the REL’s ground will produce an undesirable shorting to ground. If connecting to a Class-D amplifier, follow the above connection procedure for differential amplifiers.

• When connecting RELs to Mono Bloc amplifiers (2) RELs, one for each amplifier, must be used. Connect

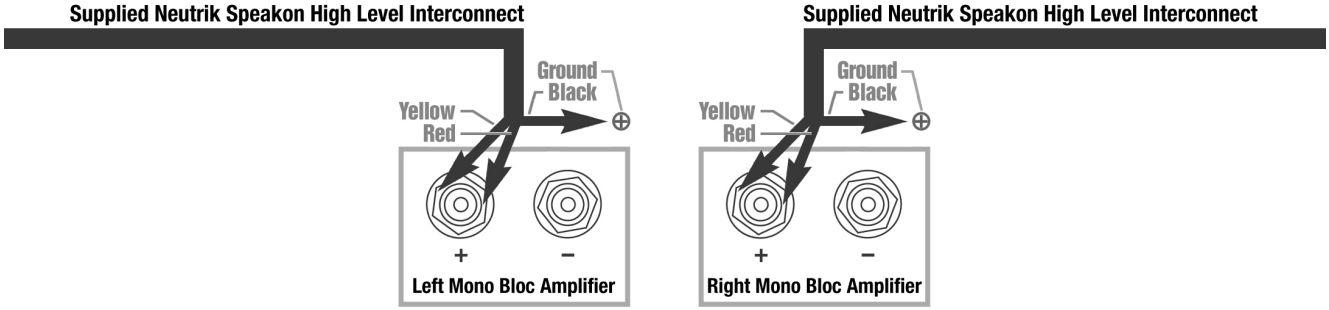
the black wire of each REL to chassis ground screws or bolts of the corresponding amplifier channel; twist together the red and yellow wires of each REL separately and connect each pair to the positive speaker terminal of the corresponding amplifier channel. In some instances, this will result in exceptionally high gain (output) from the RELs. If it seems simply too high in gain, please remove either the red or yellow wire from the twisted pair. This will reduce output by half and restore a natural dynamic.

Mono Bloc Connection



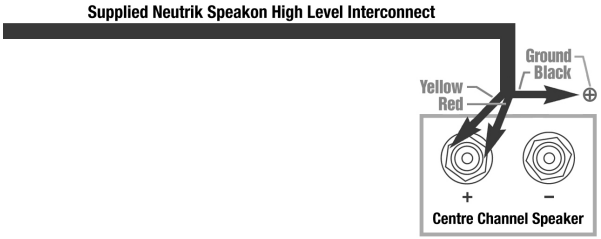
If the amplifier is of balanced differential design, please follow the instructions in the section above labeled Differential Connection.

Mono Diff Connection



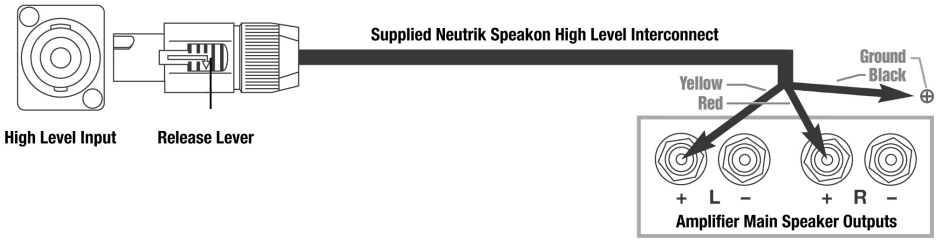
• If connecting a single REL as a dedicated centre channel sub, twist together the red and yellow wires and

connect these paired wires (red/yellow paired together) to the positive centre channel amplifier terminal. Connect the black wire to a ground lug or chassis screw on the amplifier.



• If connecting a REL as a dedicated rear channel sub, connect the yellow wire to the left rear positive speaker terminal; connect the red wire to the right rear positive speaker terminal, connect the black wire to a ground lug or chassis screw. If the amplifier is of balanced differential design, please follow the instructions in the section above labeled Differential Connection.

Rear Connection



Low-level connection (via RCA connectors) is always an option if High Level connection is not possible. When connecting to the low-level inputs in a system in which High Level connection is not possible, such as if using internally amplified speakers, connect left and right RCA cables between the LOW LEVEL INPUT jacks of the REL and the left and right channel outputs of your preamplifier.

When connecting to a home cinema system where there is a .1/LFE channel output, connect a single RCA to RCA or XLR to XLR cable between the sub output of the processor/receiver and the .1/LFE input jacks on the REL.

Positioning Single Serie S for Best Results:

The optimal position for a single REL Serie S is in one of the corners behind the main speakers. This position provides 9 dB of room gain and allows for the best low bass extension. Do not simply place it as close to the walls as possible. Instead, once basic optimization of Phase, Crossover and Gain have taken place, carefully move your REL in small increments whilst using cut #4 on the CD soundtrack of the movie Sneakers. Listen for pressure-driven nodes. Choose the one that offers the best combination of deep bass with speed and delicacy.

Corner Placement Fine Tuning: The first step is to determine precisely how far from the corner the sub should be placed to achieve the most efficient output, as well as the lowest frequency extension. With the REL fully loaded into the corner, and toed in toward the listening position, continue to play music while slowly drawing the REL out from the corner on the diagonal. As you do so, note certain points (sometimes a matter of only a few inches, in rare cases a foot or more) where the REL will audibly go lower, or play louder, and, if it truly locks on to the room and is fully pressurizing it, the air around the REL will feel more energized. Stop right there! This is the correct position from the corner for the REL.

Orientation, Fine Tuning Toe-In: Once the position from the corner has been established, the toe-in of the REL must be determined by rotating the REL from an imagined centre point at the rear of the REL. As the REL is toed in from one side to the other, listen for the greatest level of output and bass linearity. In effect, the REL should be left in the position where it sounds both the richest and most focused. If your room is too full sounding, slightly toeing your REL out will result in reduction of richness but may be more desirable in rooms that output too much bass.

Positioning Dual Serie S for Best Results

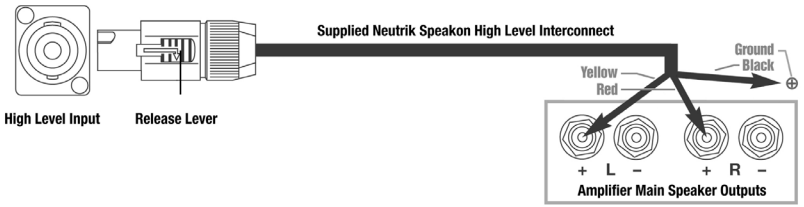
Stereo Sub-Bass is advised for the fastest, clearest, deep bass—not simply for more output. Conventional wisdom has it that the use of stereo subs results in between +3 and +6 dB additional output depending upon positioning. In and of itself, this is of only passing interest since, in most instances, even a single Serie S is capable of profound output. What then, is the point to adding a second bass sub in stereo?

In a word, clarity. Clarity that permits “seeing” back into the farthest reaches of the sound stage. Clarity

that illuminates all dimensions of the musicians and the space that they inhabit equally and enhances the natural reality of a great full range system, as only RELs can. Stereo Serie S and Line Arrays, often referred to as 6-Packs, produce clarity, transparency, speed and low level detail NOT just in the bass but throughout the entire spectrum of music. The advice to disconnect all signals to all but one subwoofer becomes critical when setting up Line Arrays.

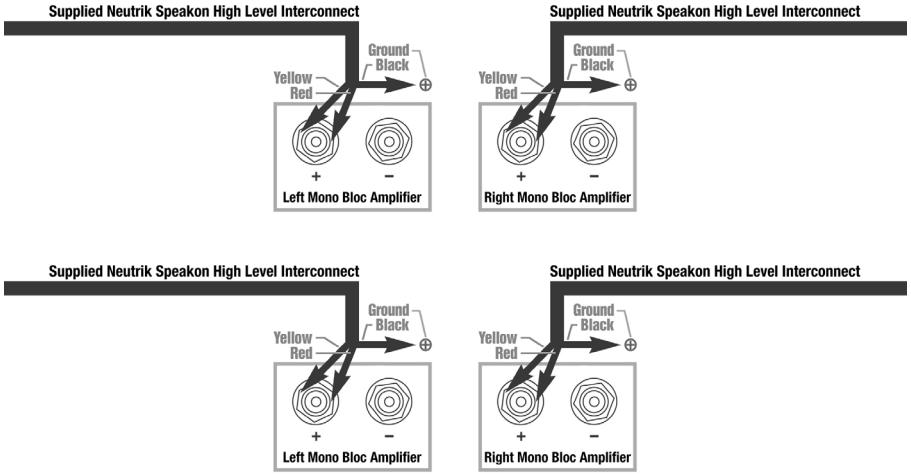
Set-Up: When setting up stereo Serie S, it is possible to place both units in the front corners of the room carefully toed-in and placed per normal guidance in this manual. Connect each sub to the speaker terminal outputs based on the following diagrams for standard stereo amp, non-balanced mono blocks or balanced differential mono blocks.

Standard High-Level



Differential (i.e. Fully Balanced)

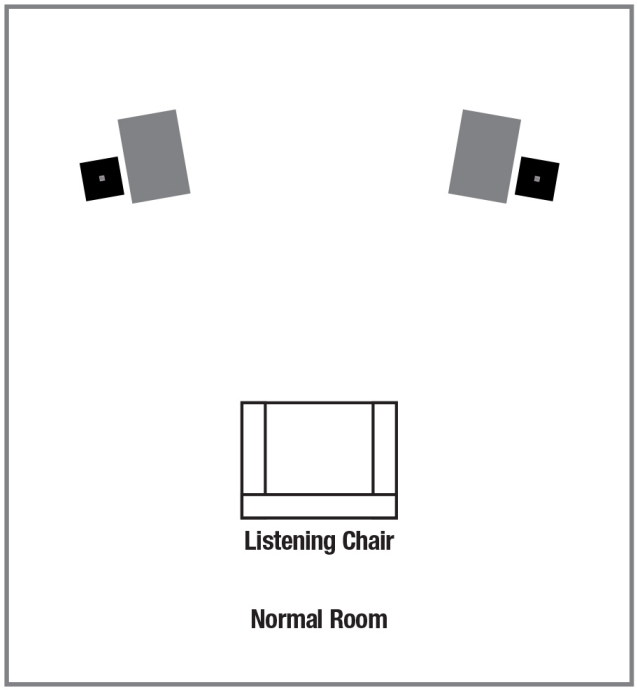
Mono Bloc Connection

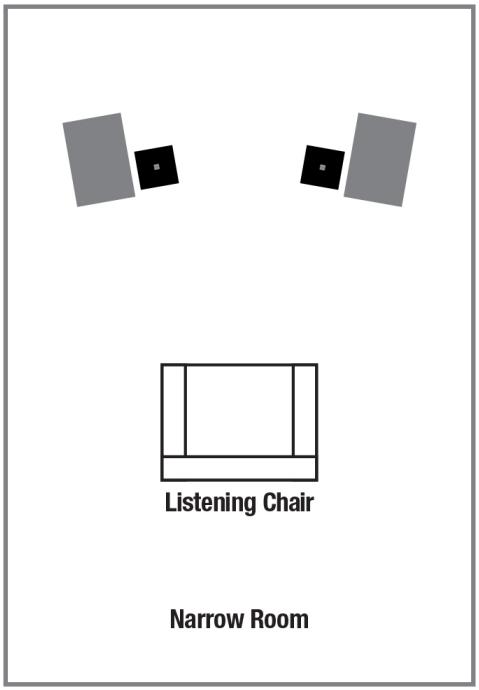


Expert Set-Up: Depending upon your room's character, it may be preferable to bring the subs further out into the room and place them slightly behind and outboard of the main speakers.

1 Set each side up independently. Disconnect the sub that is not being set-up at that moment so your complete focus can be given over to the sub that is being set-up. Carefully follow the guidance provided in standard set-up if you are unfamiliar with standard REL set-up procedure for gain, phase and crossover settings. *(see page 15 thruogh 20 for Standard Set-Up procedure)*.

2 Carefully fine-tune the position of the sub in its recommended location (slightly behind and to the outside of the main speaker) listening for rich powerful room nodes, but focusing on speed and connection with the main speaker. Since there will be a preponderance of output available to a stereo Serie S owner, focusing on connection with and blending with the main speaker becomes the primary focus, not merely raw output.





3 Once each sub has been carefully tuned, attach the cables for both subs. At this point, the output achieved will be too loud and will require re-setting the volume/gain control of Serie S normal as the combined output is likely to be at least 3 dB louder with both subs now being used. Carefully turn down each sub until the perfect balance is achieved. While turning the left or right sub gain down, it is helpful to turn slightly and even lean slightly toward the side that is being adjusted to better achieve focus and a balanced sound level more quickly.

Setup: The Process

To begin the set-up process, select a piece of music that has a repetitive bass percussion line that is very low in frequency. We exclusively use track 4 from the soundtrack to Sneakers (Columbia CK 53146), it is the best REL setup track we've ever found and works perfectly for dialing in Phase and Crossover values. This has a repetitively struck bass drum that appears throughout and that gives one plenty of time to move the woofer around whilst listening and making adjustments. Due to the very deep nature of this instrument's bass, it consistently allows for accurate setting of crossover and gain. This track is perfect for the set-up process and should be played at a high enough level to drive the room hard, but short of doing damage to speakers or REL. Work with one REL connected at a time. Only after each is optimized should both be connected and gain reduced 1-2 clicks to re-establish proper gain.

1. Phase Orientation:

Once in the corner, we need to adjust for phase. This may be the single most critical step, and because it is so simple, it is often over-thought. Keep in mind; the correct phase is whichever setting (0 or 180 Degrees) is the loudest or fullest. While playing Sneakers, cut #4, adjust Hi/Low Level to a point where the REL and the speaker appear to blend at the REL. During this process, leave the Crossover at its lowest setting as this ensures that you are correctly achieving a Phase result based on deepest bass. Simply switch between "0" and "180" phase positions listening for whichever position is loudest or fullest. This is the correct position. That is, this is the position that is working in harmony with your main speakers, reinforcing bass, not cancelling it.

RELTip: Do NOT get caught up in attempting to assign audiophile virtues to the sound quality of bass ("Oh, the bass sounds lighter and more delicate in such-and-such phase setting"). Phase is an essentially digital reaction, the purpose being to arrive at a setting wherein the REL is acting as a piston in concert with one's main speakers. Doing so results in louder output. Simple.

2. Crossover and Level Settings:

To determine the crossover point, take the volume of the REL (using the HI/LO Level control) all the way down, and set the Crossover to 10 o'Clock (1/3rd total rotation) as an initial setting. Now, begin adjusting the volume back up slowly to the point where you have achieved a delicate balance, i.e. the point at which you can just hear the Serie S even with the main speakers playing. We suggest bringing the crossover point up until it is obviously too high; then gently reducing frequency until the perfect balance has been achieved. For all intents and purposes, this is the correct crossover point. Once this stage has been reached, subtle changes to volume and crossover may be accomplished to provide the last bit of complete and seamless integration. With that, set-up is complete.

RELTip: One of the persistent myths regarding sub bass is that "One should never hear the subwoofer if it properly set." Fair enough, but for those trying to set up their sub, this is useless advice. After all, leaving one's sub unplugged would satisfy that guidance. Instead, know that proper Crossover setting is achieved when a melding of both deep bass and music from one's speakers occurs. It actually does change slightly (and with experience, one will find this is for the better and more accurate). When it's perfectly crossed over, a very slight richness comes over the music. One crossover frequency click lower and this is replaced by a very slightly cool, mechanical quality.

Additional Listening Tips: There is a tendency to set the crossover point too high and the level of your Serie S too low when first learning how to integrate a REL with the system. The most common fear being one of overwhelming the main speakers with bass. In making this common error, the resulting set-up will be lacking in deep bass, rather overly emphasizing middle bass which will result in lack of integration and a too thick and plummy quality to your system. The proper crossover point, and volume setting will increase overall dynamics, allow for extended bass frequencies, and improve soundstage properties. Note, volume adjustments may need to be made to offset the effects of crossover changes. In general, when selecting a lower crossover point, more volume will need to be applied. Higher crossover frequencies will require less gain.

Stacking

REL Serie S are designed to allow multiple units to be used in conjunction either as stereo pairs or, for ultimate performance, in vertical tower stacks of stereo subs 3 per side. Stacked towers extend and strengthen the performance remarkably.

REL Couplers are provided to secure the top sub to the next unit below safely. These are made of thick aluminium and bolt the subs together using the hardware provided. The Couplers require a 6mm hex wrench to tighten.

We strongly advise anchoring Line Array stacks of the Serie S to a wall. Use a quality furniture restraint made of nylon webbing or braided steel cable that may be tied to one of the upper REL Coupler, generally that which is closest to a side or rear wall. Please follow the instructions of the restraint you choose and anchor to a structural portion of your wall.

https://www.consumerreports.org/furniture/how-to-anchor-furniture-to-help-prevent-tip-overs-a4328328212/

To help settle Serie S on soft floors, each unit has leveling discs installed into the foot rails near the bottom front. If needed, these can be backed out by rotating them counterclockwise to help level the subwoofer. If these are needed to help level a stacked line array, only the bottom unit should employ the leveling discs. The units stacked on top should not have their leveling discs backed out.

Please ensure that the floor is level before stacking REL reference subwoofers and avoid stacking on deep carpet that may not provide a stable surface.

Connectivity for Line Arrays of Serie S, Multiple Sub-Bass Systems

To render connectivity simple, Serie S provides both inputs and outputs for all connections. Thus, each channel's stack of Serie S can be connected using only one High Level main cable from power amp to REL stack. When "daisy chained" each sub-bass system retains its autonomy and each will need to have its output level, crossover point, phase, etc. adjusted individually.

Theatre Connectivity for Line Arrays of Serie S, Multiple Sub-Bass Systems

In a .1/LFE film sound configuration, each channel will require a single.1/LFE cable (either XLR or RCA connections are included) per L/R channel as well, but additional unit's .1/LFE connections in a tower may be daisy chained to minimize clutter. Stacked Serie S subs have the ability to effortlessly energize even very large theatres with huge wavefronts of air that will carry sound to the full height of the screen, an effect best demonstrated by removing the top level of subs, followed by the middle level to hear on screen events descend in their positioning. Serie S Line Arrays possesses the ability to convey the musical event or film sound spectacularly and with great ease.

Theatre Applications

For Dolby Digital AC3 or other 5.1 theatre systems, once the standard set-up for the two-channel outlined above is complete, the LFE output from the processor or receiver should be connected to the .1/LFE INPUT and appropriate volume adjustments made using the .1/LFE level control. For this configuration, you must set the processor to the "large" or "full range" setting for the left and right speakers in order for the REL to receive the bass signal via the High Level cable. In this configuration, the REL provides support for both the left and right speakers for two-channel listening, and support for the LFE when movies are playing. Most processors will allow you to defeat the subwoofer output when listening in the two-channel mode. The effect of this set-up is one of greatly increased dynamics in the mid-bass range, no bass bloat, and a greater degree of space and timing from the special audio effects. For an even greater sense of space and impact, a second REL connected in parallel to the centre channel will prove to be a dramatic improvement as well. And if that is not enough, a rear REL, both to support the rear channel speakers as well as to evenly distribute LFE through the room, truly completes the full-range sonic picture for state-of-the-art film reproduction.

Running In

The care taken during run-in will be rewarded by many years of pleasurable use. Both the electronics and the drive unit will benefit from an initial period of carefully controlled use. Possible damage may be sustained by running in the unit at too high a volume setting over an extended period. On the other hand, by taking a little care over this initial period, about 24 hours of actual use, a longer life with a higher potential eventual performance is assured.

Care and Polishing

The cabinets are best maintained by using an automobile polish made by reputable manufacturers. Our favorites are those made by Meguiars and Mother's. If objects are to be placed upon the top, it is advisable to use a small mat to protect the surface and to avoid the risk of rattles.

Overload Protection

All REL Sub-Bass Systems are designed as true sub bass speakers. They are designed to reproduce those exceptionally deep notes that are felt as well as heard. This it will attempt to do at whatever volume level you set. If set too high no damage should result because the built-in electronics will limit the cone movement. This electronic control is called Set-Safe™. It constantly and instantaneously monitors the output from the power amplifier and is totally transparent in operation until required. This means it has absolutely no effect on the sound quality of your REL until an overload is detected.

Ordinarily an overload would cause the power amplifier to go into clipping with resultant loss of control over the drive unit. This can cause drive unit damage and always sounds nasty. Set-Safe™ detects the point of incipient clipping and gently soft-clips the waveform of the signal to ensure actual clipping does not occur.

This is a necessarily simplified description of what actually happens, but in effect, Set-Safe™ controls the amplifier and ensures there is minimum risk of amplifier and driver damage caused by over-driving.

A thermal overload device is fitted to all Serie S Sub-Bass Systems. If the unit is deliberately over-driven this device will sense the temperature rise and cut the output; recovery time is approximately five minutes. If this happens, it is a warning that the unit is being over-driven, and the volume level control should be reduced to a safe level.

Although everything possible has been done to minimize the risk of thermal overload failure, there can be no defense against those individuals who deliberately abuse the device. Such damage is NOT covered by warranty. Please remember your REL is there to supplement your main system, not overwhelm it!

Power Saving Efficiency

All REL sub bass system designs utilize a true On-Off switch that affords the owner the ability to turn off their unit completely, without having to unplug the A/C mains cord. When a REL sub bass system is switched off using the On-Off switch on the rear panel it draws ZERO power.

In addition to the efficient power-at-idle exhibited by all REL models, the Serie S also features an automatic standby mode that is enabled when the power mode switch on the rear of the unit is set to the "STANDBY" position. In this mode, the input signal is constantly monitored for audio activity. If not audio information is detected over a period of 30 minutes, the unit will enter a low power standby mode in which less power is consumed. When input signal activity is detected, the unit resumes normal operation. By using the standby mode, you can ensure that there is no unnecessary power draw when the unit is not in use.

Note: Due to variations in program material, it is impossible to produce a perfectly reliable standby circuit. Bass rich music or effects will consistently trigger our standby circuit whilst content that is low in volume and possesses little or no bass cannot be relied upon to trip the standby function.

Alternatively, the user has the option to leave the unit in the normal operation mode at all times by selecting the "ALWAYS ON" position of the power mode switch. Leaving a REL on, produces the best sonic performance and the most reliable operation. In this mode, the unit will not enter standby regardless of whether or not there is activity at the input. Using this setting ensures that the Serie S is ready to react instantaneously to bass transients, whether in music or films.

The REL Serie S is shipped in the "ALWAYS ON" mode. During initial setup, use the REL this way. After initial setup, if you wish to employ the standby mode, simply move the power mode switch into the up position to "STANDBY".

Model	Power Draw at Standby	Power Draw at Idle
S/850	>0.5 Watts	20 Watts
S/550	>0.5 Watts	13 Watts

S/850 Specifications

Type: Front-firing active driver, down-firing passive radiator

Active Drive Unit: 12 in. (305mm) long-throw, CarbonAlloy™ cone structure, die cast alloy chassis

Passive Radiator: 12 in., (305mm), Carbon/Carbon flat cone structure, steel chassis

Lower Frequency Response in Room: -6 dB at 19Hz

Input Connectors: High Level Neutrik Speakon, Left and Right Low Level phono, LFE phono, LFE XLR

Output Connectors: High Level Neutrik Speakon, , Low Level RCA, LFE XLR

Gain Control Range: 80 dB

Power Output: 850 watts (RMS)

Phase Switch: Yes, 0 or 180 degrees

Amplifier Type: Linear Class D

Wireless capability: Yes- REL AirShip [required]. Sold separately.

Protection System

Fully Electronic with SET-SAFE: Yes
D.C. Fault: Yes
Output Short: Yes
Mains Input Voltage: 220-240 volts, 110-120 volts for certain markets
Fuses: 8 Amp semi delay 220 volts operation, 15 Amp semi delay 120 volts operation

Dimensions

W x H x D, Including Feet and Rear Panel Controls: 19.25 x 16.125 x 21.25 in., (488 x 410 x 540 mm)
Add 1.75in (44.5mm) in depth when using Hi Level connector
Net Weight: 93.5 lbs. (42.5 kg)
Finish: Piano Black Lacquer or Gloss White Lacquer, 8 coats

Supplied Accessories

Mains Lead: Yes
Neutrik Speakon Interconnect 10 Metres Nominal: Yes
Users Manual: Yes

S/550 Specifications

Type: Front-firing active driver, down-firing passive radiator

Active Drive Unit: 10 in. (250mm) long-throw, CarbonAlloy™ cone structure, die cast alloy chassis

Passive Radiator: 12 in., (300mm), Carbon/Carbon flat cone structure, steel chassis

Lower Frequency Response in Room: -6 dB at 19Hz

Input Connectors: High Level Neutrik Speakon, Left and Right Low Level phono, LFE phono, LFE XLR

Output Connectors: High Level Neutrik Speakon, , Low Level RCA, LFE XLR

Gain Control Range: 80 dB

Power Output: 550 watts (RMS)

Phase Switch: Yes, 0 or 180 degrees

Amplifier Type: Pure Class D

Wireless capability: Yes- REL AirShip [required]. Sold separately.

Protection System

Fully Electronic with SET-SAFE: Yes
D.C. Fault: Yes
Output Short: Yes
Mains Input Voltage: 220-240 volts, 110-120 volts for certain markets
Fuses: 5 Amp semi delay 220 volts operation, 10 Amp semi delay 120 volts operation

Dimensions

W x H x D, Including Feet and Rear Panel Controls: 17.5 x 14.75 x 19.75 in., (445 x 372 x 500 mm)
Add 1.75in (44.5mm) in depth when using Hi Level connector
Net Weight: 68 lbs. (31 kg)
Finish: Piano Black Lacquer or Gloss White Lacquer, 8 coats

Supplied Accessories

Mains Lead: Yes
Neutrik Speakon Interconnect 10 Metres Nominal: Yes
Users Manual: Yes