



Control[®] Contractor
SURFACE-MOUNT SPEAKERS

**“Frequently Asked
Questions”**

Ver 2.0

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REFERENCE – Surface-Mount Model Listing

(Add “-WH” for white)

JBL’s Control Contractor Series consists of both surface-mount and in-ceiling speakers. This guide is an introduction to only the SURFACE-MOUNT models. Please contact JBL Professional for information about the other Control Contractor models.

Control 18S	Subwoofer w/ Satellite Output
Control 18ST	70V/100V version (60W, 30W, 15W + 7.5W @ 70V), NO satellite output
Control 23	2-Way w/ 3½” LF
Control 23T	70V/100V version (5W @ 70V, 10W @ 100V)
Control 25	2-Way w/ 5¼” LF
Control 25T	70V/100V version (30W, 15W, 7.5W, plus 3.7W @ 70V)
Control 28	2-Way w/ 8” LF
Control 28T-60	70V/100V version (60W, 30W, 15W, plus 7.5W @ 70V)
Control SB-2	Dual Channel subwoofer w/ satellite outputs, No 70V/100V version

QUESTIONS & ANSWERS ABOUT CONTROL 18S, 23, 25 & 28:

Are the Invisiball mounting brackets included with the speakers at no extra cost?

Yes!

Is full-range overload protection included in the speakers?

JBL’s **SonicGuard** non-invasive protection circuitry is included inside the Control 23, 25 & 28, as well as in the transformer (“T”) versions, providing full-range protection (not just for the tweeter). The Control 18S Subwoofer also includes overload protection.

The Exceptions: The Control SB-2 subwoofer does not include overload protection. The “T” version of Control 18S (Control 18ST) is current-limited by the transformer and therefore does not need overload protection.

How do I paint the speakers?

The Control 18, 23, 25 & 28 are made of high impact polystyrene which accepts a wide variety of paints. For best results, follow the painting directions on page 10 of the Owner’s Manual. This is a condensed version of the instructions:

Remove the grille and mask the baffle. Clean the enclosure with a light solvent such as mineral spirits. Apply two or more thin coats of either latex or oil-based paints. Latex paints adhere better if an oil-based primer is used first. The InvisiBall mount may also be painted, but because it is metal, latex paints will not adhere as well as other finishes.

Masking the Baffle –

For best results, mask out the ENTIRE baffle, leaving the baffle black. Then paint the speaker cabinet including the grille. Not only does this make painting a LOT easier, it looks better.

Alternate Paints –

If the specified paint is not available in your area (possibly due environmental restrictions, as in California), you may use a variety of new-generation waterbased paints. We successfully test-painted Control Contractor speakers substituting a water-based primer and spray paint. We also tested a worst-case scenario by simply spray-painting the speakers, no primer, with a generic spray paint and got acceptable adhesion. Of course, you will get the best adhesion by using the recommended paint and following the procedure in the manual.

Are they available in white?

The Control 18S, 18ST 23, 23T, 25, 25T, 28 and 28T-60 are ALL available in white. Add “-WH” to the model number to designate a white unit (such as Control 25T-WH)

Are the white versions paintable?

Yes. They are made of the same easy-to-paint material as the black versions.

We lost a grille logo during an installation. Can I get replacements?

Yes. You can order spare logos as service parts:

950-00005-04 = Control 18S grille logo	950-00005-05	Control 18ST grille logo
950-00006-00 = Control 23 grille logo	950-00006-01	Control 23T logo
950-00007-00 = Control 25 grille logo	950-00007-01	Control 25T logo
950-00005-00 = Control 28 grille logo	950-00005-03	Control 28T-60 logo

I have an application where there can be no brand identification. Do you make available blank grille-logo inserts?

Yes. We don't like having our logo removed but we realize there are applications where this is a requirement. Therefore, we make blank logos available for purchase. The front of the blank logo is flat so the dealer or customer can cover it with a personalized sticker, if desired.

<u>Model</u>	<u>Black Blank Logo</u>	<u>White Blank Logo</u>
Control 23/23T	950-00006-BK	950-00006-WH
Control 25/25T	950-00007-BK	950-00007-WH
Control 18S/18ST/28/28T/28T-60	950-00005-BK	950-00005-WH

QUESTIONS & ANSWERS ABOUT WEATHER RESISTANCE:

Can I install the speakers outdoors?

Models Control 18S, 18ST, 23, 23T, 25, 25T, 28 and 28T-60 are “weather resistant”. They pass MilSpec 810 and are IEC rated as “splashproof” (IEC529 rating of IP-x4).

A report available from JBL entitled “Details of Weather Resistance Testing in Control Contractor Speakers” describes the tests leading to these ratings. These speakers are NOT weatherproof and should not be installed totally unprotected from the elements. With these ratings, the speakers should be protected under an overhang.

The Control SB-2 is NOT capable of being used outdoors.

How can I get a “sealed entrance” for the input wires?

The MTC-PC (for “P”anel “C”over) is a simple-to-use cover for the input terminal panel. The MTC-PC installs over the existing input cup, providing a sealed gland-fitting entrance to further protect the input panel against incursion of water. The cover is black and is paintable.

Models – The MTC-PC fits all the Control Contractor models EXCEPT Control 18S and Control SB2, because the terminals are larger to accommodate the satellite output terminals. The MTC-PC DOES fit the Control 18ST version (there is no satellite output on the “T” version).

QUESTIONS & ANSWERS ABOUT ACCESSORIES:

What accessories & brackets are available for the surface-mount models?

Ceiling Mount Brackets –

These brackets allow you to mount the Control 23, 25 & 28 down from the ceiling instead of out from the wall. They are called ceiling mount “*adapter kits*” because they include only the shaft/ball assembly for use with the existing Invisiball base that comes with the speaker.

MTC-28/25CM – For Control 28 or 25, order 1 “piece” and you receive one pair of bracket adapters, black or white (-WH).

MTC-23CM – For Control 23, order 1 “piece” and you receive one pair of bracket adapters, black or white (-WH)

Subwoofer Brackets –

The **MTC-SB2W** bracket is for installing the Control SB-2 onto a wall or into a corner.

The **MTC-SB2C** bracket is for suspending the Control SB-2 down from the ceiling.

See below for more information about these brackets.

Arraying Bracket Information –

MTC-23V	Vertical array wall bracket for three Control 23 speakers.
MTC-25V	Vertical array wall bracket for three Control 25 speakers.
MTC-28V	Vertical array wall bracket for three Control 28 speakers.
MTC-25/23H	Horizontal array bracket for two Control 23 or Control 25 speakers, 60° splay. Three brackets connect to form suspendable assembly for six speakers with 360° coverage.
MTC-28H	Horizontal array bracket for two Control 28 speakers, 60° splay. Three brackets connect to form suspendable assembly for six speakers with 360° coverage.

Adapters to Threaded Rod, Threaded Pipe & Suspended Ceilings –

Omnimount Systems in Scottsdale AZ, makes a number of adapters for installing Control Contractor speakers via threaded rod or threaded pipe.

Model	Description
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FOR CONTROL 25 & 28 (7/16”x 20 TPI Invisiball shaft):

50PA BLK	Coupling adapter, black, to 1/2” Threaded Plumbing Pipe
50TA BLK	Coupling adapter, black, to 7/16”-20 (fine) Threaded Rod
5000MA BLK	Coupling adapter, black, to Microphone Stand Adapter 5/8”-27

FOR CONTROL 23 (6mm dia.x 1mm pitch Invisiball shaft):

25TA 6mm BLK	Coupling adapter, black, to 6mm dia (standard 1mm pitch) Threaded Rod
JNUT 6mm BLK	Black 6mm jam nut for 25TA 6mm BLK
JBL 6mm CLNG CLIP BLK	Ceiling clip, black, for suspended ceiling T-channel, 2 pc system locks around channel.

JBL does not stock these adapters. They are available directly from [Omnimount Systems](#) or from one of their distributors throughout the world. To order direct contact:

Omnimount Systems
1501 W 17th St.
Tempe, AZ 85281
Phone: (602) 829-8000
Fax: (602) 756-9000

Where can I get more information about the brackets?

CCBRK HNDBK V1 is a Bracket and Adapter Handbook for the Control Contractor surface-mount models, with mechanical drawings of the brackets.

QUESTIONS & ANSWERS ABOUT TRANSFORMER VERSIONS:

Tell us about the transformers in these speakers.

Less Low-Frequency Saturation -- These speakers incorporate top quality transformers which exhibit very little low-frequency saturation. The transformers in the Control 18ST subwoofers is specially designed to provide full rated output down to 40 Hz with very little saturation.

Insertion Loss -- The insertion loss is extremely low – typically less than 0.5 dB – resulting in better power transfer and more speaker output.

Tap Ratings -- The tap rating is specified at 400 Hz.

How does the sound quality of the “T” models compare to the non-transformer models?

The sound quality for the transformer versions is comparable to that of the non-transformer versions. Some people report that they think it even sounds better! Some of our competitors use transformers that exhibit a LOT of low frequency saturation. We use transformers that are remarkably stable down to 40 Hz, even at full drive levels. This makes them easier loads for amplifiers to drive and prevents premature signal clipping.

Which model do I order for 100V or 70V applications?

The same “T” models work on BOTH 100V and 70.7V distributed lines. Regardless whether you use 100V or 70.7V distributed line systems, you use the same speaker. On the Control 18ST, 25T and 28T-60 there is a switch to select the power taps. The Control 23T has a single power tap (non-selectable).

What are the power taps for the various models?

Control 25T: The power taps are **30W**, **15W** and **7.5W** at both 70.7V and 100V, with a **3.7W** tap for 70.7V only.

Control 18ST and Control 28T-60: The power taps are **60W**, **30W** and **15W** at both 70.7V and 100V, with a **7.5W** tap for 70.7V only.

The taps for the models listed above are selected by a rotary switch on the back panel. A guide is provided on the back of each speaker showing which switch positions to use for the power settings at 70V and 100V.

Control 23T: A single (non-selectable) power tap rated at 5W @70V and 10W @100V.

QUESTIONS & ANSWERS ABOUT THE CONTROL SB-2

SUBWOOFER:

How do I install the SB-2?

The MTC-SC2C Bracket

Use the MTC-SB2C bracket to install the Control SB-2 suspended from the ceiling.

The MTC-SB2W Bracket

Use the **MTC-SB2W** bracket to install the Control SB-2 either to a wall surface or into a corner.

With both brackets, the bracket acts as an enclosed shelf on which the SB-2 sits. The bracket's outside lip and securing screws keep the subwoofer from sliding or jumping off of the bracket.

IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THE STRENGTH OF THE BRACKET/BUILDING CONNECTION AND OF THE STRENGTH OF THE BUILDING STRUCTURE!

Can I use the Control SB-2 outdoors?

No. The Control SB-2 is not made to be used outdoors. It is constructed of particle board which tends to swell with moisture. If you have an outdoor installation requiring a subwoofer, use the Control 18S and 18ST. They ARE outdoor capable.

Can I paint the SB-2?

Yes, but it's a different procedure than with the other models. The SB-2 is covered in a scratch-resistant vinyl. For the paint to adhere, you must first degloss ("scuff up") the scratch-resistant coating on the surface of the vinyl. Fine sand paper works well for deglossing, then clean the surface with a "tack cloth" before painting. A variety of paints can then be used. It is best to use a oil-based primer before painting with latex paint.

QUESTIONS & ANSWERS ABOUT SYSTEMS:

Is it best to rely on the subwoofer's internal crossover and satellite output or is it better to use an external crossover and separate power amp channel?

While the SB-2 and Control 18S both have top quality passive crossover networks, you will get a better sonic result by crossing them over with an active crossover and running the subwoofers from a different amplifier channel than the satellite speakers.

Crossover Frequency – When using an active crossover, the recommended crossover range is anywhere between 80 Hz and 120 Hz (higher for Control 23, lower for Control 28). Various rooms can sound better with different crossover points, even using the same speakers, so experiment with what sounds best for your speakers and room.

Crossover Slope – Use as steep of a crossover slope as your crossover allows. 24 dB per octave is a good crossover slope.

Control 18ST – On this 70V/100V version there is NO satellite output. There IS a passive low-pass filter inside the subwoofer. If a Control 18ST is connected in parallel with the satellite speakers, there may be excessive overlap in the 80 Hz to 160 Hz range, resulting in a muddy sound. To avoid this situation, it is best to use an active crossover and separate amp channel.

What is the JBL CCS6000 Control Contractor Subwoofer/Satellite System?

CCS6000 is a subwoofer/satellite system consisting of:

- 1-Control SB-2 Subwoofer
- 4-Control 23's as High-Passed Satellites, connected to SB-2 Satellite Outputs

What Does the "6000" signify? -- The CCS6000 System covers a 6000 square foot room at a typical 85 dB-SPL background music level, with amazingly even coverage -- within 1½ dB (between 150 Hz and 8 kHz!) --throughout the listening area. 6000 square feet is about 560 square meters.

How Do I Use CCS6000? -- The "6000" figure is a baseline coverage area for system designs. From this baseline, you can scale the coverage up or down to adjust for applications with different SPL requirements and different size rooms.

Here is an example: Let's look at a taller room where the speakers are placed at the ceiling. The 6000 square foot coverage spec is with the speakers at a 15 ft (4.6 m) height -- a 90,000 cu ft (2550 m³) room. In a 30-foot tall room, the same SPL can be attained with a floor space of 4000 sq ft (370 m²) with ±0.5 dB variation in level. This is a 120,000 cu ft (3400 m³) room. By placing the speakers at the ceiling we attain more even coverage yet a smaller coverage area due to lower SPL from the speakers being farther away. JBL's CADP2 software can be a very useful tool for determining SPL capabilities, variation levels, and ideal locations for installation of the speakers in various size rooms.

Larger Rooms -- Multiple **CCS6000** systems can be used to cover areas larger than 6000 cubic feet. As a general rule in a single open space, 2 systems can cover an area that is **2.5 times** the area of a single system (approx 15,000 square feet) due to overlap in satellite coverage in the center areas.

Characteristics of All Subwoofers – While it is true that a subwoofer projects sound omnidirectionally (in all directions) and that the sound is generally non-localizable (sound like it's coming from everywhere), there is still a drop-off in subwoofer sound level the farther away one gets from the subwoofers installed location.

From a coverage standpoint, it is often desirable to place the subwoofer in the middle of the room. Unfortunately, placement in the middle of a room lowers the sensitivity and ultimate output capability of the subwoofer. To attain the required output, it might be desirable or necessary in some applications to install the SB-2 or Control 18S subwoofers along a wall or in a corner and use multiple subwoofers in order to attain a more even subwoofer coverage.

How does the JBL CCS6000 System compare in performance to typical subwoofer/satellite systems?

Compared to most sub/sat systems, the **CCS6000** system provides greater separation between the subwoofer and the satellite frequency bands. The 2nd order crossover low-pass and acoustic low-pass of the load baffle form a dual-slope 3rd order low-pass to the sub; the high-pass to the satellites is 1st order. *Electrically*, the low-pass is 160 Hz and the high-pass is 320 Hz. The resulting intermediate band separates impedance interaction between the sub and the satellite. Because of a rising frequency response at the high end of the sub and low end of the satellites, the actual *acoustic* crossover point is symmetrical at 160 Hz and is quite seamless. This optimum band separation, results in a subwoofer/satellite system with exceptional clarity as well as the impedance benefits which are discussed in more detail below.

System Clarity & Listener Comfort –

The response of the system has been tailored to facilitate communication within the coverage space and to not compete with people who are trying to have conversations. This reduced “voice masking” allows talkers (customers) to understand each other better at lower talking levels, making for a more comfortable atmosphere.

The Benefits of Impedance Separation –

Many other sub/sat systems have substantial overlap between the sub and the satellites. In the **CCS6000** system, below the crossover frequency the amplifier only “sees” the subwoofer impedance; above crossover the amp sees only the satellites. For design purposes, you can consider the satellite and the subwoofer loads to be totally separate from each other. For example, an 8Ω subwoofer and an 8Ω satellite on a single channel of an amp results in a total 8Ω load (not a 4Ω load) because the amp never sees both speakers at the same time on the same signal. Similarly, an 8Ω subwoofer channel with two 8Ω satellite speakers (which is the normal mode of operation) presents a minimum 4Ω load to the amplifier. This allows more satellite speakers to be utilized without loading down the amp with too low of an impedance.

How do I order a CCS6000 System?

The model number for ordering purposes is “**CCS6000**”. The JBL CCS6000 System is a system module *recommendation*, but it is not bundled together in a single carton for shipping. So you can either order it by its individual product models: 4 - Control 23's and 1 - Control SB-2, or you can order it as a **CCS6000** (or CCS6000-WH for white Control 23's, the SB-2 remains black). The system is shipped in 3 cartons: 2 pairs of Control 23's and 1 Control SB-2.

Remember to add an **MTC-SB2W** or **MTC-SB2C** bracket if you want to install the subwoofer to a wall or corner.

What other PASSIVE subwoofer/satellite system configurations does JBL recommend?

The Control Contractor Series contains a variety of models, allowing great flexibility to configure a system to fit the requirements of many different applications. To help establish some starting points for passive subwoofer/satellite systems we have developed some other recommended system combinations, (these combinations are structured for stereo SB-2 or mono Control 18S channels):

Other Configurations which work well are:

Control 25's:

- **For high bass-content applications** – 2-Control 25's in series with each other on each channel of an SB-2 or on the satellite output of Control 18S. Use multiple modules as required.
- **For lower bass-content applications** – 2-Control 25's in parallel or 4 Control 25's in series/parallel on each channel of an SB-2 or on the satellite output of Control 18S.

Control 28's:

- 1-Control 28 on each channel of an SB-2 or on the satellite output of Control 18S.

These configurations are only a few of the systems you can configure using Control Contractor Series speakers. Some of the considerations you need to think about in configuring a PASSIVE system are outlined in the answer to the next question.

What considerations do I need to think about in using Control Contractor as “building blocks” to configure various PASSIVE subwoofer/satellite systems?

It is easier and more effective to combine subwoofers and satellite speakers when ACTIVELY crossing over the speakers and operating them on separate amplifier channels. When configuring PASSIVE subwoofer/satellite systems, there are a number of items that must be taken into consideration:

1) Configuration Considerations When Using the SB-2 Passive Crossover: When wiring the SB-2 passively into any system, you need to look at a) the impedance of both the low-pass and the high-pass bands, b) the sensitivity balance between the subwoofer and the satellite, and c) the output level capability.

- a) Impedance of Both the Low-Pass and the High-Pass Bands:** Because the SB-2's crossover network does a good job of separating the low-pass and high-pass frequency bands (see explanation, above), you can usually consider the impedance in each band as being nearly separate from each other.
- **Crossover Frequency & Impedance** – The crossover frequency is set for the ideal 160 Hz acoustic crossover point with a 4-OHM LOAD on each satellite output. It is best to use a 4-ohm load on each satellite output when possible. *Increasing* the impedance of the satellites on a satellite outputs *lowers* the crossover frequency to the satellites, resulting in more overlap – in frequency response and in impedance – between the subwoofer and the satellite. Using an 8-ohm load on each satellite output results in operating the satellite speaker down to 80 Hz. With the subwoofer operating up to 160 Hz, this could result in a frequency response bump between 80 Hz and 160 Hz, where both subs and sats are operating. This is a situation to avoid when possible.
 - **Mono System SB-2 Impedance** – To operate an SB-2 in mono, parallel the two subwoofer inputs, resulting in a 4Ω load in the subwoofer range, below 160 Hz. When hooking an SB-2 in mono IT IS VERY IMPORTANT TO MAKE SURE THAT BOTH INPUTS ARE CONNECTED IN PROPER POLARITY, otherwise the coils will fight each other resulting in very little subwoofer output and eventually leading to driver failure.
 - **Mono System Satellite Impedance** – In mono systems (with the inputs of the subwoofer paralleled), the amp “sees” the loads hooked up to the Left and Right satellite outputs as being in parallel with each other. For example, if your amp is rated for a minimum 4-ohm load, then you need to make sure the parallel of the Left and Right satellite loads is no lower than 4-ohms. If you're running just 2 satellite speakers from a mono'd SB-2, it is best to put them both on ONE of the satellite outputs (with nothing on the other satellite output). This maintains a 4Ω load on the connected satellite output, resulting in the proper high-pass frequency.

b) Sensitivity Balance – The required sensitivity balance between the subwoofer and satellites varies by the musical requirements of the application. A pub or health club might require much more bass content than does a background music system.

- **Satellite Sensitivity** – Sensitivity of the satellite section varies by the sensitivity of the particular satellite model chosen, the number of speakers and the hookup topology. Higher satellite sensitivities result in less relative subwoofer level.
- **Subwoofer Sensitivity** – Sensitivity of the subwoofer can be adjusted by varying the location of the subwoofer. Starting at a wall-to-wall junction you can *increase* bass output by moving the subwoofer closer to the ceiling or floor; you can *decrease* bass output by moving it out onto a flat wall. You can *decrease* bass output further by suspending it in the middle of the room. It may be a good idea to install the subwoofer last, adjusting the location to achieve the desired bass balance.

c) SPL Capability – The system designer needs to check that the SPL capability of both the satellites and subwoofer is adequate for the application. You can compute the theoretical maximum continuous SPL from each speaker by the following formula : *10 times the log of the continuous pink noise capability (which is 3dB below the program rating) plus the sensitivity.* Theoretical Max Continuous SPL's for Control Contractor speakers are:

Model	Typical Location	Theoretical "Max. Continuous SPL" (1m)
Control 23	On-wall (2π loading)	100 dB-SPL
Control 23T	On 70V line	92 dB-SPL
	On 100V line	95 dB-SPL
Control 25	On-wall, (2π loading)	107 dB-SPL
Control 25T	30W tap	102 dB-SPL
Control 28	On-wall (2π loading)	111 dB-SPL
Control 28T-60	60W tap	109 dB-SPL
Control 18S	Wall/wall/ceiling ($\pi/2$ loading)	115 dB-SPL
	Wall/wall or wall/ceiling ($1-\pi$ loading)	112 dB-SPL
	Center of wall or ceiling	109 dB-SPL
	Suspended	106 dB-SPL
Control 18ST	60W tap, wall/wall/ceiling	112 dB-SPL
Control SB-2	Wall/wall/ceiling ($\pi/2$ loading)	122 dB-SPL
	Wall/wall or wall/ceiling ($1-\pi$ loading)	119 dB-SPL
	Center of wall or ceiling	116 dB-SPL
	Suspended	113 dB-SPL

Qualifications:

Headroom for Real Music or Speech – These figures are for a standard pink noise test signal with a short-term "peak" SPL (or crest factor) that is 6 dB higher than this theoretical continuous maximum. In most applications you need to design the system with higher headroom – often 10 to 14 dB. Assuming program with a 10 dB peak-to-average ratio, you can expect a continuous music or speech signal that is 4 dB LOWER (10 dB below the peak which is 6 dB higher) than these stated pink noise maximums.

Distributed Line Headroom – The figures for the "T" versions above assume that the 70V or 100V amplifier has adequate headroom. If the amp clips at the 70V or 100V level, subtract 3 dB from these figures.

Power Compression – Power compression affects everyone's speaker systems, so the theoretical maximum is "approached", but not actually sustained.

Additional SPL from Multiple Speakers – The coverage of the satellites usually overlaps in the center of the space, so in addition to using the inverse square law to indicate the SPL level at a distance, you need to add in the overlap with other speakers. Another consideration is the low-frequency coupling of multiple speakers which tends to reinforce the bass response more than other frequencies.

Using CADP2 – The considerations listed above can be complex. CADP2 allows you to model the speaker's performance and SPL capability in the listening space. CADP2 files have been developed for the Control 23, 25 & 28.

2) Driving the SB-2 Separately – The *best* way to control the subwoofer level is by running it on its own amplifier channel, with its own volume control.

Can I run a Control 18ST on a 70V or 100V distributed system?

Yes, the Control 18ST IS intended to operate from a 70V or 100V line. It has a special transformer designed not to saturate at low frequencies. It is IMPORTANT to drive the Control 18ST from an amplifier that also does not saturate at low frequencies (such as JBL's MPC amplifiers).

Can I run an SB-2 on a 70V or 100V distributed system?

The SB-2 is NOT intended to be operated from a 70V or 100V line. To operate the SB-2 on a distributed-sound line, you need to add your own transformer, which MUST be a very good quality subwoofer transformer. Most transformers saturate at low frequencies, dropping the impedance in the subwoofer range to a fraction of what it is at higher frequencies. This can draw too much current from the amplifier – either causing the amp to fail or creating undesirable audible artifacts such as premature amp clipping or “topping-out” at low levels. This can degrade the sound that goes through the full-range speakers as well. Full isolation transformers are typically much better than autoformers for subwoofers because they exhibit much less low frequency saturation. Make sure the transformer has plenty of iron. The more power you put through the transformer the more it saturates, so even a transformer that looks well behaved on low-signal test equipment can saturate badly on higher voltage distributed lines. It requires a large and expensive transformer to drive the SB-2 adequately on a distributed line.

It is often a better idea to run the SB-2 from its own low-voltage (not 70V/100V) amplifier channel and run only the satellites from the distributed-sound (70V/100V) line.

What equalization do you recommend for satellite-only or sub/sat systems?

The proper equalization depends on many factors, such as the quantity of speakers (the more speakers, the more bass coupling), the room characteristics, the typical operating level (Fletcher-Munson equal loudness contours), the type of activity taking place in the venue, and the tastes of the listeners.

For more information about Control Contractor Series, contact JBL Professional's Customer Service or Technical Assistance Departments.



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