

McIntosh
PS1K Powered
Subwoofer



McIntosh PS1K Powered Subwoofer Owner's Manual

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McIntosh

McIntosh PS1K Powered Subwoofer



Specifications:

- **Manufacturer:** McIntosh Laboratory, Inc.
- **Model:** PS1K
- **Power Source:** AC
- **Power Control Input Voltage Range:** 5 to 20 DC
- **Connector Type:** 1/8 inch stereo mini phone plugs

Product Usage Instructions

Introduction:

Safety is a top priority when using the PS1K-powered subwoofer. Please read all safety instructions provided in the Important Additional Operation Information Guide.

Safety Cover:

The PS1K comes with a clear safety cover on the rear surface. Do not remove this cover under any circumstances, and avoid making any electrical connections to the terminals inside the unit.

Packing and Unpacking the PS1K:

1. Use the Power Control Cable Part No. 170202 for connecting the PS1K. This cable is shielded and has two 1/8-inch stereo mini phone plugs.
2. The Power Control Input of the PS1K functions within a 5 to 20 DC Voltage range. The Power Control Output will only send a signal if a source is connected to the Power Control Input.
3. Avoid connecting speaker-level output terminals from any receiver, amplifier, or integrated amplifier to the inputs of the PS1K to prevent damage.
4. Connect the PS1K to a dedicated circuit with an AC outlet. The dedicated circuit must comply with local electrical wiring codes. Consult your McIntosh dealer and a certified electrician for guidance.
5. Refer to the Unpacking Instructions attached to the shipping crate for safely unpacking the heavy PS1K.

Ensure you have sufficient manpower for handling.

6. Handle the PS1K with care to prevent scratches on its polished finish. Remove sharp objects like rings, belt buckles, watches, etc., before handling. Avoid touching the woofers directly as they are not protected by covers or grilles.

Thank You from all of us at McIntosh

You have invested in a precision instrument that will provide you with many years of enjoyment. Please take a few moments to familiarize yourself with the features and instructions to get the maximum performance from your equipment.

If you need further technical assistance, please contact your dealer who may be more familiar with your particular setup including other brands. You can also contact McIntosh with additional questions or in the unlikely event of needing service.

McIntosh Laboratory, Inc. 2 Chambers Street Binghamton, New York 13903

- **Technical Assistance** [607-723-3512](tel:607-723-3512)
 - Fax [607-724-0549](tel:607-724-0549)
- **Customer Service** [607-723-3515](tel:607-723-3515)
 - Fax [607-723-1917](tel:607-723-1917)
- **Email**
 - support@mcintoshlabs.com
 - www.mcintoshlabs.com

Please Take A Moment

For future reference, you can write down your serial number and purchase information here. We can identify your purchase from this information if the occasion should arise:

- Serial Number: _____
- Purchase Date: _____
- Dealer Name: _____

Introduction

The McIntosh PS1K Powered Subwoofer is designed for Home Theater and Music Reproduction. It has two 13-inch LD/HP woofers, each powered by its own 500 watt amplifier, plus built-in High and Low Pass Filters and two Parametric Equalizer Filters for subwoofer room correction. The PS1K PS1K-powered subwoofer complements the capabilities and the remarkably low distortion of McIntosh Power Amplifiers and loudspeaker systems. Each component in the PS1K has been carefully designed for durability, efficiency, and above all, low distortion. The McIntosh PS1K Powered Subwoofer will reproduce music accurately and function as an excellent Powered Subwoofer.

Safety First

Please read the safety instructions included in a separate document called Important Additional Operation Information Guide.

Safety Cover

The PS1K is factory-equipped with a clear safety cover on the rear surface. Do not remove this cover for any reason, and never make any other electrical connection to the terminals inside.

Important Information

1. The following Connecting Cable is available from the McIntosh Parts Department: Power Control Cable Part No. 170202 Six foot, 2 conductor shielded, with two 1/8 inch stereo mini phone plugs.
2. The PS1K Power Control Input will function within a 5 to 20 DC Voltage range. The Power Control Output will only send a signal if a source is connected to the Power Control Input.
3. To avoid damage, do not connect the speaker level output terminals from any receiver, amplifier or integrated amplifier to the inputs of the PS1K Powered Subwoofer.
4. The PS1K should be connected to a dedicated circuit with AC outlet. The type and size of the dedicated AC circuit with outlet needs to be in accordance with the local electrical wiring codes. Always contact your McIntosh dealer and certified electrician for additional information and assistance.

Packing and Unpacking the PS1K

Warning: The PS1K is very heavy.

Please refer to the Unpacking Instructions located in a envelope attached to the shipping crate. Be sure to have the appropriate manpower available to handle safely.

The PS1K is finished in a highly polished but durable paint. However, it can be scratched, so please ensure all sharp objects like rings, belt buckles, watches, etc are removed prior to handling. Also please note the PS1K has no protective covers or grilles over the woofers. So please ensure not to reach and grab the product woofers. Once removed and placed in your listening area, the protective film may be removed by slowly peeling off, all around the speaker. Also remove the protective rubber ring on the metal base. Packing the PS1K is the reverse of unpacking, so please be sure to save all instructions and materials.

Performance Features

• Woofers with Patented LD/HP® Technology

- The McIntosh Low Frequency Loudspeaker Elements feature the patented LD/HP Magnetic Circuit Design. This design, when compared to conventional Loudspeaker Drivers, reduces distortion significantly. It also increases power handling and efficiency.
- The die cast basket has an open air area under the voice coil/spider assembly to prevent displacement noise. The carbon fiber cone with a corrugated rubber surround has a six layer high temperature voice coil and is rigid to perform as a near perfect air piston.
- All together these advances in woofer design construction and materials produce the very important first several octaves of music, with a high degree of accuracy and superb transient response. This performance level rivals woofers twice the size of the PS1K woofer.

• Gold Plated Input Connectors

The PS1K Input Connectors are gold plated for superior corrosion resistance and high electrical conductivity.

• Low Harmonic and Intermodulation Distortion

The PS1K Loudspeaker System is capable of reproducing the full dynamic range of a symphony orchestra with very low audible distortion of any kind.

• Sealed Enclosure

The PS1K uses acoustic suspension design techniques. This type of loading was pioneered decades ago, and uses a linear air spring of the enclosure to keep distortion low, suspension under control at all times, and provide an extended low frequency output below resonance.

• Large Woofer with Integral Heat Sink

Massive dual magnets with thick front and back plates provide an incredible heat sink for the voice coil. The voice coil itself is wound on a 3" diameter aluminum bobbin to further aid in the dissipation of heat. The ability to dissipate heat greatly improves the driver's capacity to perform at high power levels and not suffer from power compression.

- **Rigid Woofer Framework**

A black powder coated, die cast aluminum basket is used as the framework for the driver. Such framework is necessary to keep the driver's moving components aligned during the long excursions a subwoofer can produce.

- **Rigid Woofer Cone**

The PS1K uses custom designed unified carbon fiber cone, dust cap, and coil mounting technology. This provides exceptional cone rigidity to assure no cone breakup under the most demanding conditions.

Additionally, the corrugated style cone suspension provides extended linear cone travel over most woofer designs.

- **High Power and Low Distortion**

The PS1K's two 500 Watt Amplifiers have very low Total Harmonic Distortion (THD). This 0.05%THD rating combined with the low distortion of the McIntosh LD/HP Driver provides exceptionally smooth and clean low frequency response.

- **Power Guard**

The patented McIntosh Power Guard circuit prevents the PS1K Amplifier from being over driven into clipping, which causes harsh distorted sound that can also damage your valuable Loudspeaker.

- **Signal Sensing Circuitry**

In addition to the McIntosh Remote Power Control feature, the PS1K utilizes signal-sensing circuitry. This signal sensing circuitry is beneficial when the PS1K is to be located at a great distance from the preamp and running an additional Power Control Cable for remote turn on is not feasible.

- **Phase Control**

The continuously variable phase control provides precise adjustment for the subwoofer phase.

- **Balanced and Unbalanced Inputs/Outputs**

Balanced connections guard against induced noise and allow long cable runs without compromising sound quality.

- **Sentry Monitor and Thermal Protection**

McIntosh Sentry Monitor power output stage protection circuits ensure the PS1K will have a long and trouble free operating life. Built-in Thermal Protection Circuits guard against overheating.

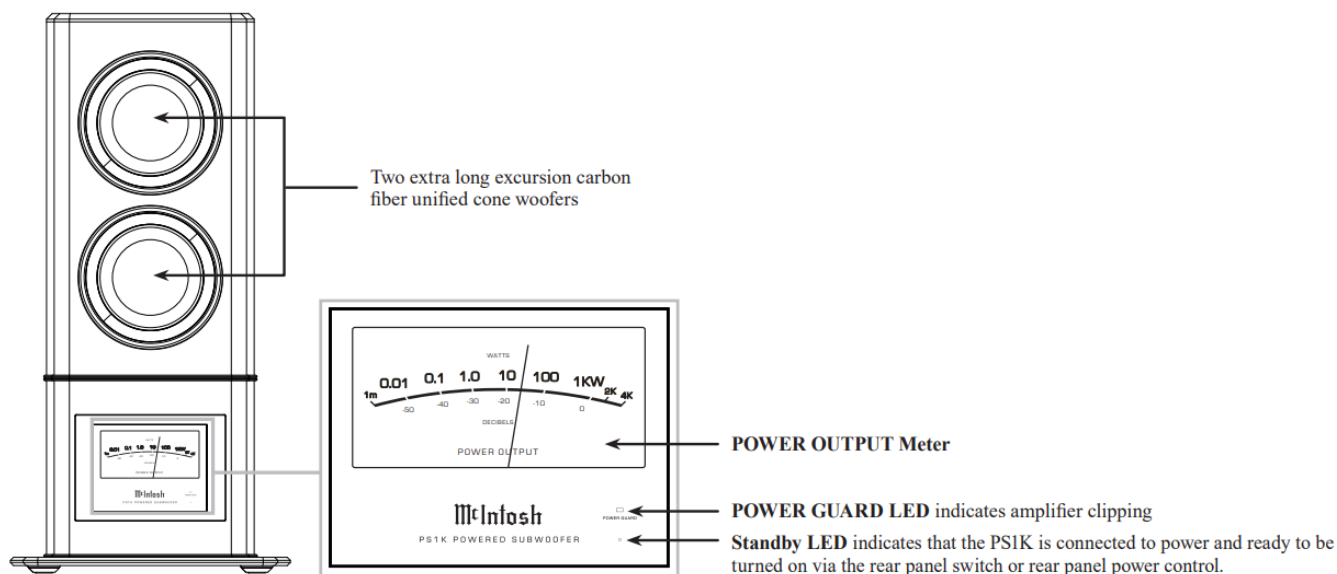
- **Parametric Filter**

The Parametric Filter provides simple peak or dip filtering to the subwoofer output for room effect correction. These filters may be used independently from any other room correction methods.

- **Signal Pass Through**

Signal Pass Through is used for easy chaining of one PS1K to another.

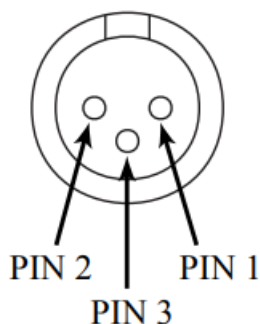
Front View Features



Connector Information

XLR Connectors

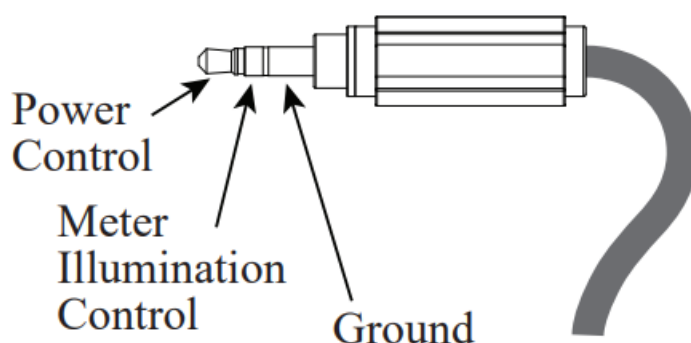
Below is the pin configuration for the XLR balanced output connectors on the PS1K. Refer to the diagram for connection:



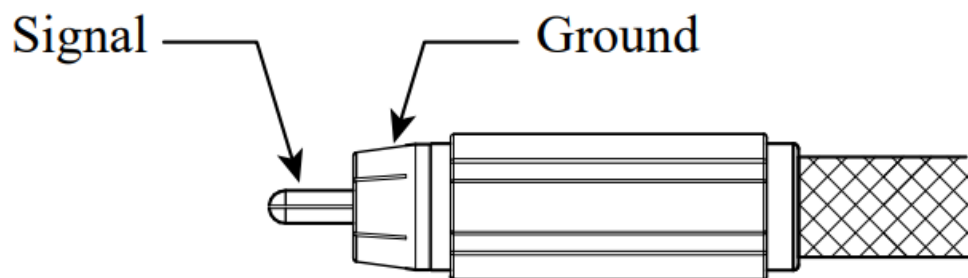
- PIN 1: Shield/Ground
- PIN 2: + Input/Output
- PIN 3: – Input/Output

Power Control Connectors

The PS1K POWER CONTROL INputs and OUTputs on the rear panel send and receive power on/off signals when connected to other McIntosh components. A 3.5mm stereo mini plug is used for the connections.



Meter illumination can also be controlled via the Power Control Input's source.



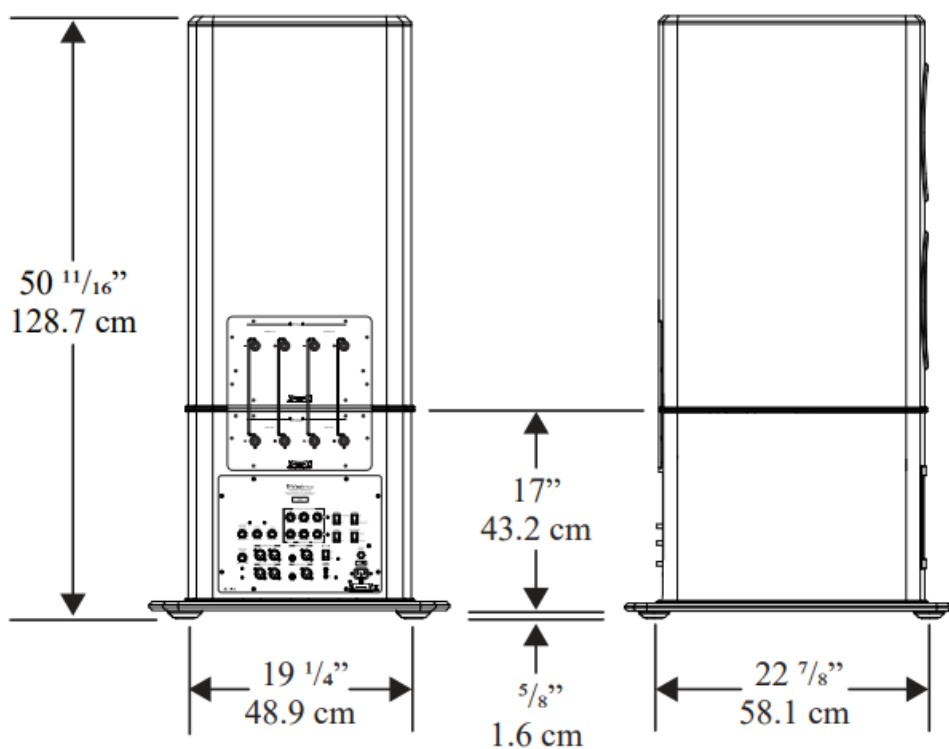
RCA Connectors

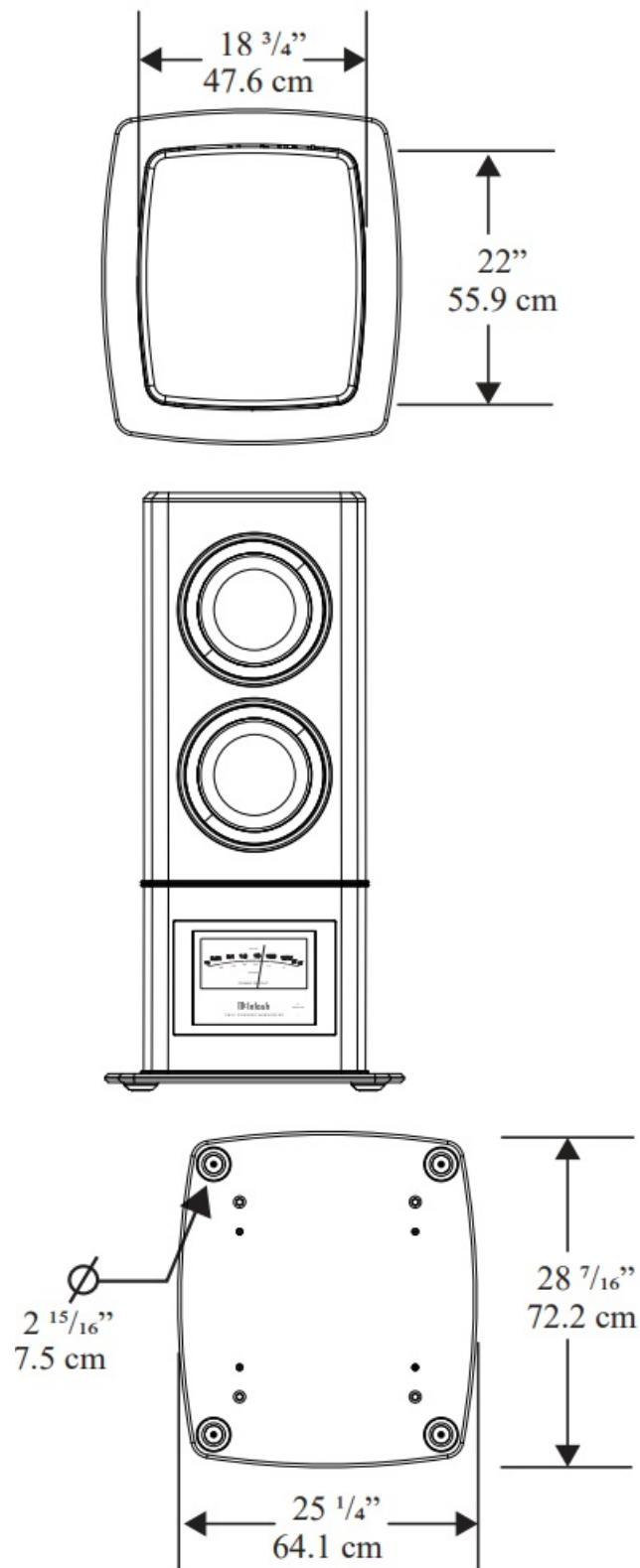
Dimensions

The following dimensions can assist in determining the best location for your PS1K Powered Subwoofer.

A Note on Placement:

To protect the anodized finish on your PS1K it is important to limit exposure to certain types of lighting and only use appropriate gentle cleaners. Direct sunlight, other forms of UV light, high intensity lighting and aggressive cleaners with harsh chemicals can result in discoloration of the anodized finish.



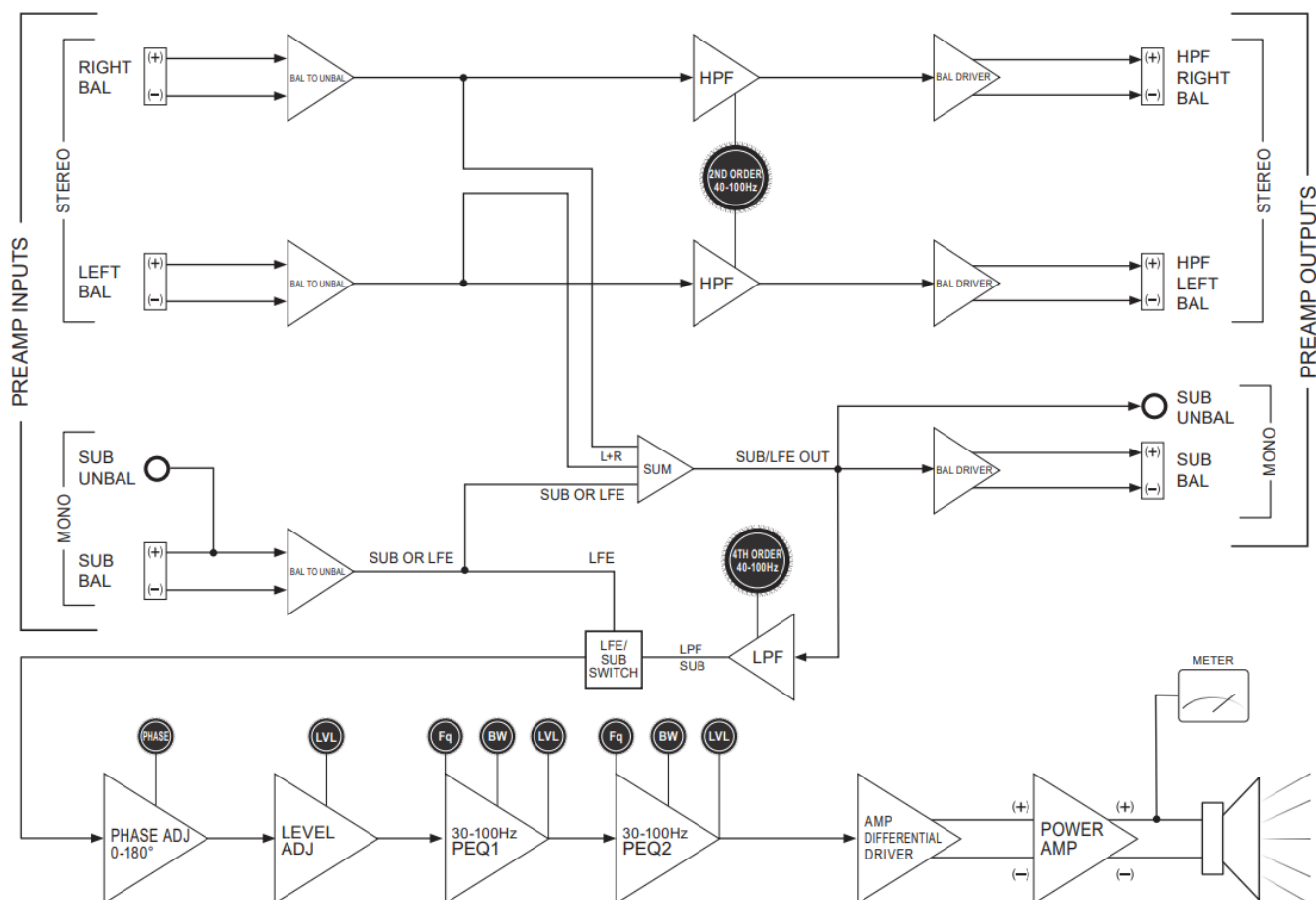


Installation

Locating the PS1K

The optimal method for selecting speaker locations includes the use of a real time spectrum analyzer (RTA) operated by an experienced system installer. An uncompromising installation would take into consideration the floor, wall and ceiling coverings, the type and placement of furniture and can even include the architectural design of the room and its construction materials. Frequencies 80Hz and below reproduced by the PS1K Powered Subwoofer are non-directional and will sound best located toward the front of the room and away from corners. It is not necessary to aim the front of the PS1K directly at the listener.

Signal Flow Block Diagram



Rear Panel

- 1. A. LOW PASS FILTER** allows for an adjustable cut-off frequency between 40Hz and 100Hz to the subwoofer. This setting is typically set to match the HIGH PASS FILTER setting below. The LOW PASS FILTER is always used if connected to Left and Right Inputs. To apply the LOW PASS FILTER the TYPE switch must be set to SUB.
- 2. B. HIGH PASS FILTER** allows for an adjustable cut-off frequency between 40Hz and 100Hz from the normal left and right loudspeakers. This lowers distortion, prevents overloading the left and right loudspeakers, and provides optimal blending with the Subwoofer output. To use the HIGH PASS FILTER, connect the L and R output of a preamplifier or integrated amplifier to the left and right inputs of the PS1K and connect the L and R outputs of the PS1K to your power amplifier(s) and set the crossover frequency depending on the size and or specifications of your loudspeakers. Suggested settings would be 40 Hz for very large loudspeakers like XRT2.1K or XRT1.1K, 60 Hz for medium size loudspeakers such as XR100, or 80 Hz for smaller speakers such as XR50. If setting the PS1K for Home Theater use, the AVR will typically have these settings internal. If this is the case, then no L or R connection or setting is required on the PS1K.
- 3. C. PHASE knob sets the acoustic output phase** to provide optimum blending into your system relative to its input. This knob is to help avoid phase cancellation (characterized by a loss of bass information) between the PS1K and any other low frequency producing speaker in the system. Careful listening while turning the PHASE knob will help you determine if this effect will be beneficial to the system.
- 4. D. LEVEL** knob sets the gain / balance of the subwoofer's output to match the rest of the system. Start with the LEVEL Knob in the center position and perform the system level calibration on the A/V Control Center or

Surround Decoder for the subwoofer level. If the subwoofer level can not be set, adjust the PS1K's LEVEL Knob to provide adequate range during calibration.

5. **E. STEREO INPUTS and OUTPUTS**

Stereo Inputs are used in a two channel music system, or any system where a preamplifier or AVR is not applying LOW or HIGH PASS FILTERs to any loudspeaker output channel. In this case, connect the preamplifier or AVR Left and Right outputs to the PS1K Left and Right Inputs. Stereo outputs are used to connect to Left and Right amplifier inputs of an Integrated amplifier, AVR, or Left and Right loudspeaker amplifier after the HIGH PASS FILTER is applied. Never connect the speaker level outputs of an AVR or 2 channel integrated amplifier to the Stereo inputs of the PS1K.

6. **F. MONO INPUTS**

If connected to the output of another PS1K or other subwoofer, then select SUB on the TYPE switch. If connected to the LFE output of a preamplifier or AVR that has the ability to apply a custom filter setting, then select LFE on the TYPE switch.

7. **G. MONO OUTPUTS** connect to the input of another PS1K or other subwoofers in a system. When the TYPE switch is set to SUB the output will be the sum of both the stereo and mono inputs and the internal LP filter of the PS1K is applied.

If connected to the subwoofer output of an integrated amplifier then select SUB on the TYPE switch.

8. **H. PARAMETRIC EQUALIZERS** provide adjustments for room effect compensation. The filters are applied only to the subwoofer output. The available filter adjustments are Frequency, Bandwidth, and Level.

The best way to set the parametric filters is with the use of a spectrum analyzer and a noise source. This will allow pinpoint accuracy of the settings. However, if unable to use such a sophisticated instrument, one may play typical music and listen for boominess or lack of output in music or other signal material.

• **Troubleshooting the Parametric Filter**

- If there is a lack of output, set the P1 filter level to + dB position.
- If a boomy sound is heard, set the P1 filter level to -dB position.
- Set bandwidth to center position. Now play the signal material and adjust the frequency control until a correction is heard. Adjust the frequency knob until it is centered on the effect. Next, adjust the level control until the sound is more uniform. Further adjustment of the bandwidth control localizes the correction to only that band where the action is desired.
- The P2 filter may be adjusted in a similar manner if the sound output is boomy or lacking character.

• **Note:**

- Each filter is fully independent of the other, so one may be adding and the other subtracting from the nominal output of the PS1K, or both adding or both subtracting.
- Both Parametric filters can be bypassed by placing their LEVEL control to 0dB.

9. **I. Input TYPE switch**

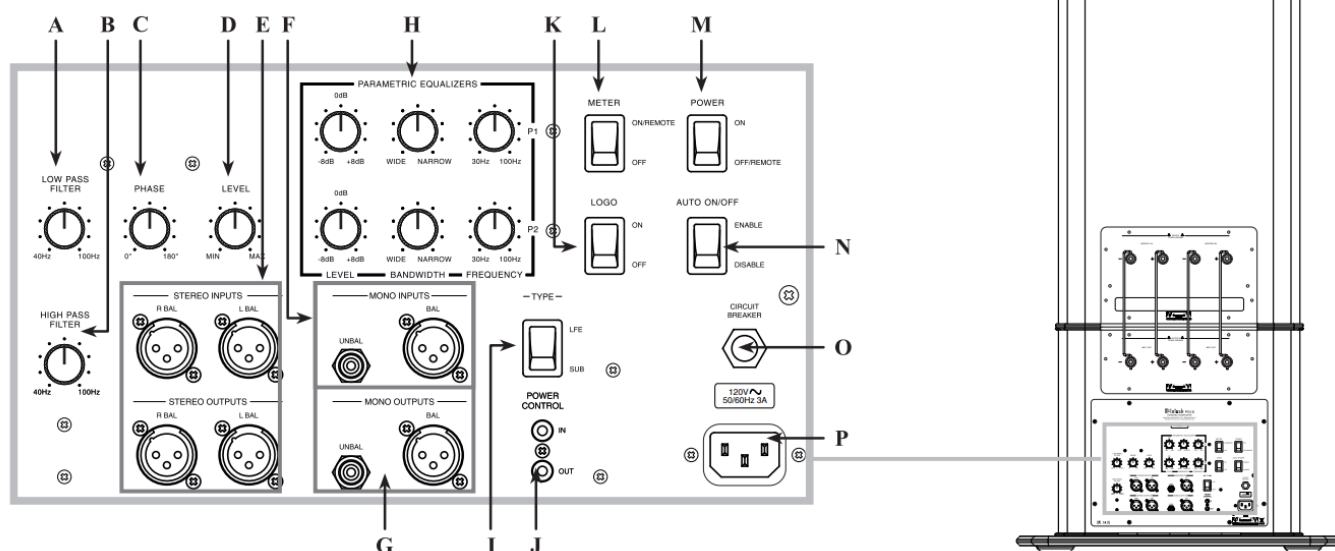
- If receiving audio with filters already applied to its signal, set switch to LFE.
- If receiving unfiltered audio, set type to SUB.

10. **J. POWER CONTROL IN and OUT**

Connect a Power Control Cable to the INput from a Control Center or Preamplifier to automatically turn on the PS1K when the Control Center or Preamplifier is on. Connect a Power Control Cable to the OUTput to send the signal to additional subwoofers or other McIntosh components to automatically turn them on as well. For the OUTput to function, a source must be connected to the Power Control INput.

11. **K. LOGO** switch controls the Logo lighting for home theater purposes.

12. **L. METER** switch controls the PS1K's Meter Lighting On/Off. When in the ON position, the PS1K will also accept power control signals to control the Meter lighting.
13. **M. POWER switch**
When set to the OFF position, the PS1K can only be turned on by a Remote Power Control signal. When set to the ON position, the PS1K will stay on depending on the position of the AUTO ON/OFF switch. Using an active Power Control signal will disable this circuitry.
14. **N. AUTO ON/OFF switch**
When set to ENABLE, the PS1K will time out with the absence of audio after 30 minutes. If Audio is detected, the PS1K will trigger back ON. Using an active Power Control signal will disable this circuitry.
15. **O. CIRCUIT BREAKER** should never activate under normal conditions. If the breaker does activate, the tip of the breaker will pop out. Reset the breaker by pushing in on the tip.
16. **P. AC input** is used to connect the PS1K to an AC outlet.



How to Connect

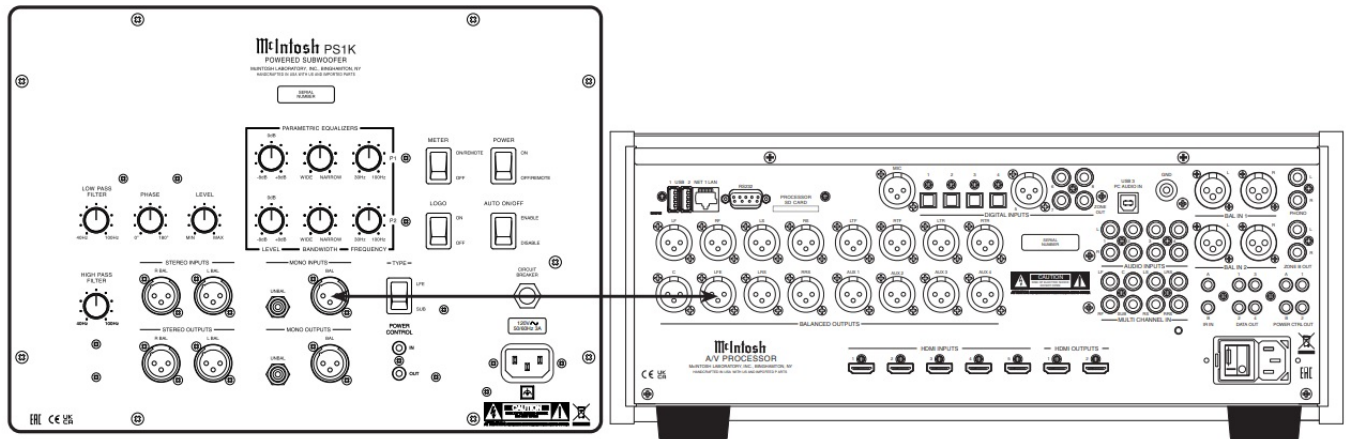
The McIntosh PS1K Powered Subwoofer may be turned On or Off by two different methods. The preferred method is to utilize the Power Control Signal from a McIntosh A/V Control Center or Audio Control Center. If the Power Control Signal is not available, the PS1K has built-in signal-sensing circuitry which will automatically turn on the Powered Subwoofer.

1. Connect a power control cable from the McIntosh A/V Control Center or Audio Control Center Power Control Out jack to the McIntosh PS1K POWER CONTROL IN jack.
2. Connect a power control cable from the McIntosh PS1K POWER CONTROL OUT jack to the McIntosh Power Amplifier Control In jack.

Notes:

- If two or more McIntosh PS1K Powered Subwoofers are being used in the same system, connect the POWER CONTROL OUT from the first PS1K to the next PS1K POWER CONTROL IN jack and then onto the McIntosh Power Amplifier.
- The PS1K Power Control Input will function with 5 to 20 Volts DC applied.

- The PS1K Power Control output requires connection of a switched Power Control input to function.
3. Connect a Balanced Audio Cable from the McIntosh A/V Control Center or Audio Control Center Subwoofer Out to the McIntosh PS1K MONO INPUT(S).
- Notes:** If two or more McIntosh PS1K Powered Subwoofers are being used in the same system, connect a second Audio Cable from the first PS1K MONO OUTPUT(S) to the next PS1K MONO INPUT(S).
4. Connect the PS1K power cord to an active AC outlet.



Connection Diagram

Subwoofer/LFE Outputs

• Home Theater Connection

Typical AVRs or AV processors will apply custom subwoofer filter settings. Connect an AVR, subwoofer, or LFE output to the mono subwoofer input of the PS1K. The TYPE switch should be set to LFE.

• Home Music System Connection

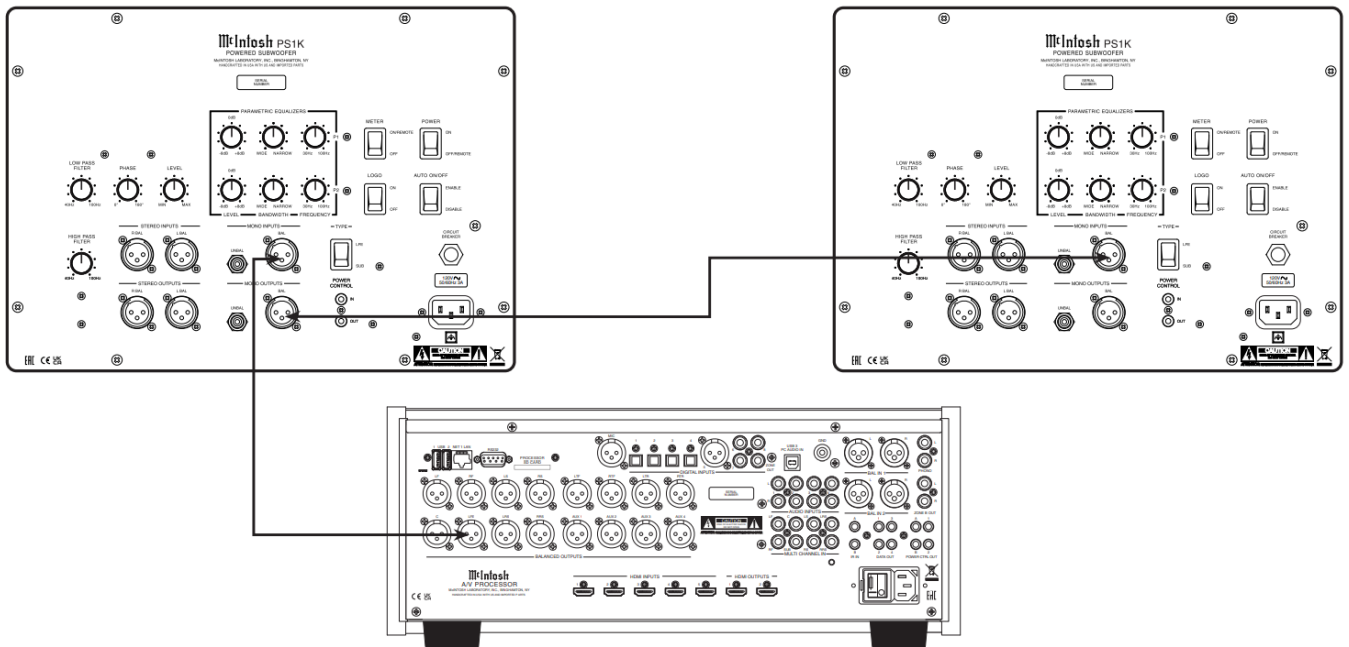
Connection to a preamplifier or music processor / integrated amplifier is made from the subwoofer output to the mono subwoofer input of the PS1K.

- If the preamplifier or music processor has an available adjustable crossover setting, use it and set the TYPE switch to LFE. If the preamplifier or music processor does not have a adjustable setting, set the TYPE switch to SUB.

Chain

To connect multiple PS1Ks to an A/V Processor in a single system use the following connections:

- The TYPE switch should be set to SUB, this allows for signal path to go through the LOW PASS FILTER.
- The LOW PASS FILTER should be set to the L and R loudspeaker's rated low frequency point. This is typically 40 Hz for large loudspeakers, 60 Hz for medium size loudspeakers, and 80-100 Hz for small loudspeakers.
- The HIGH PASS FILTER should be set to match the LP filter setting used above.

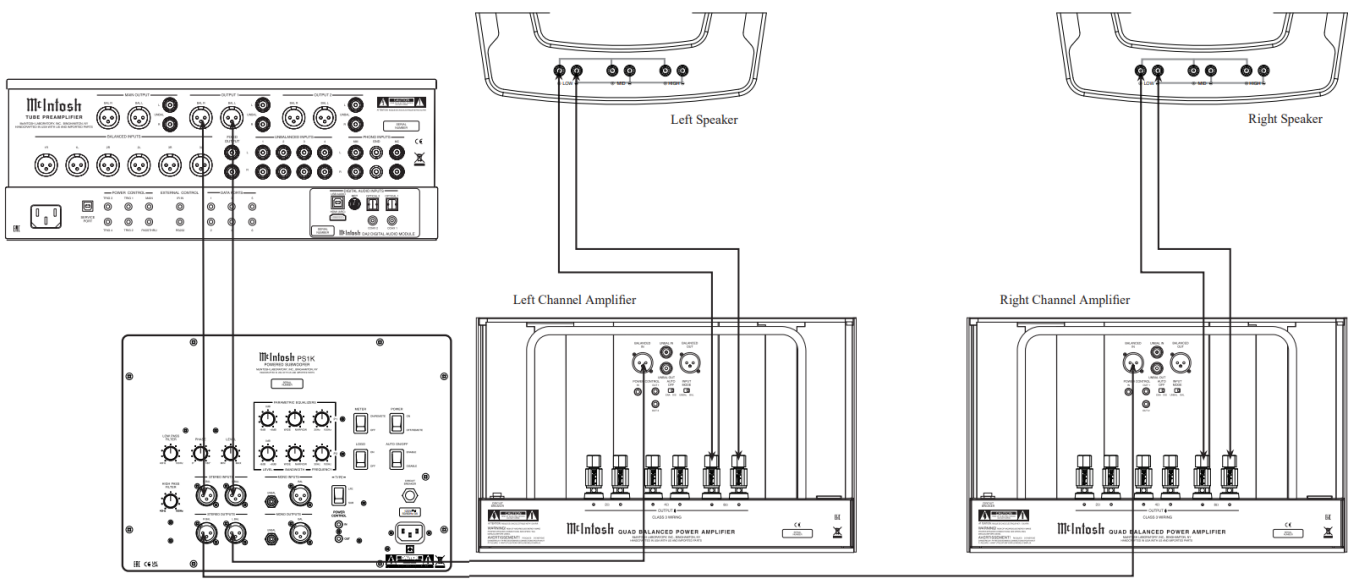


Two Channels: Home Music System Connection

Connection to a preamplifier or music processor / integrated amplifier without a dedicated subwoofer output is made from the Left and Right line level outputs to the Left and Right inputs of the PS1K. Using this method allows filtering of low frequencies from the normal Left and Right loudspeakers in your system, thus relieving them of the low frequency burden and reducing their distortion and optimally blending the output of the subwoofer and loudspeakers.

- The LOW PASS FILTER should be set to the L and R loudspeaker's rated low frequency point. This is typically 40 Hz for large loudspeakers, 60 Hz for medium size loudspeakers, and 80-100 Hz for small loudspeakers.
- The HIGH PASS FILTER should be set to match the LP filter setting used above.

Note: More than one PS1K may be chained in a music system setup. In this case, follow the chain from the first PS1K to the second as described previously and set the TYPE to SUB. Set the LP filter to match the lead PS1K and adjust parametric filters as necessary for smooth performance.



Specifications

- System Driver Complement

Two 13 inch extra long excursion Carbon Fiber Woofers (incorporating LD/HP)

- **Impedance**

- 8 ohms Nominal

- **Power Output**

- **Amplifier:** 1 KW (Two 500W, one per woofer) This rating was not tested under the FTC standard
Maximum Output > 113 dB

- **Filter Frequencies**

- **High Pass:** 40 Hz – 100 Hz
 - **Low Pass:** 40 Hz – 100 Hz
 - **Phase:** Continuously Variable
 - **Parametric:** Two band 30 Hz – 100 Hz, variable bandwidth and level +/- 8 dB

- **Input Sensitivity (Rated Output)**

- 500mV Unbalanced
 - 1V Balanced

- **THD**

- **Amplifier:** 0.05%
 - **Preamplifier** (Rear Panel Outputs): 0.005%
 - **Voltage Gain**
 - **Amplifier:** 31dB
 - **Preamplifier:** 10dB

- **Signal to Noise Ratio (A-weighted)**

- **Amp:** 115dB
 - **Preamp:** 100dB

- **Input Impedance**

- 20,000 Ohms Balanced
 - 10,000 Ohms Unbalanced

- **Maximum Input Signal**

- 4.5V Unbalanced
 - 9V Balanced

- **Power Control In**

- 5-20 VDC Trigger

- **Power Requirements**

- Field AC Voltage conversion of the PS1K is not possible. The PS1K is factory configured for one of the following AC Voltages:
 - 120 Volts, 50/60Hz at 3.0 amps
 - 240 Volts, 50/60Hz at 1.6 amps
 - **Standby:** Less than 0.25 watt

Note: Refer to the rear panel of the PS1K for the correct voltage.

General Specifications

Note: the PS1K has been tested and certified for indoor use only.

- **Enclosure Finish**

Highly polished Piano Grade Black

- **Metal Finish**

Anodized Aluminum Base, High Durable Powder Coated Plate Surfaces

- **Overall Dimensions**

- **Height** is 50 11/16 inches (128.7cm)
- **Width** is 19 1/4 inches (48.9cm)
- **Depth** is 22 1/2 inches (57.2cm)
- The base is 25 5/16 inches by 28 7/16 inches

- **Weight**

- 370 pounds (167.8 kg) net
- 683 pounds (310 kg) in shipping carton

- **Shipping Carton Dimensions**

- **Height** is 54 inches (137.2cm)
- **Width** is 36 inches (91.4cm)
- **Length** is 60.5 inches (153.7cm)

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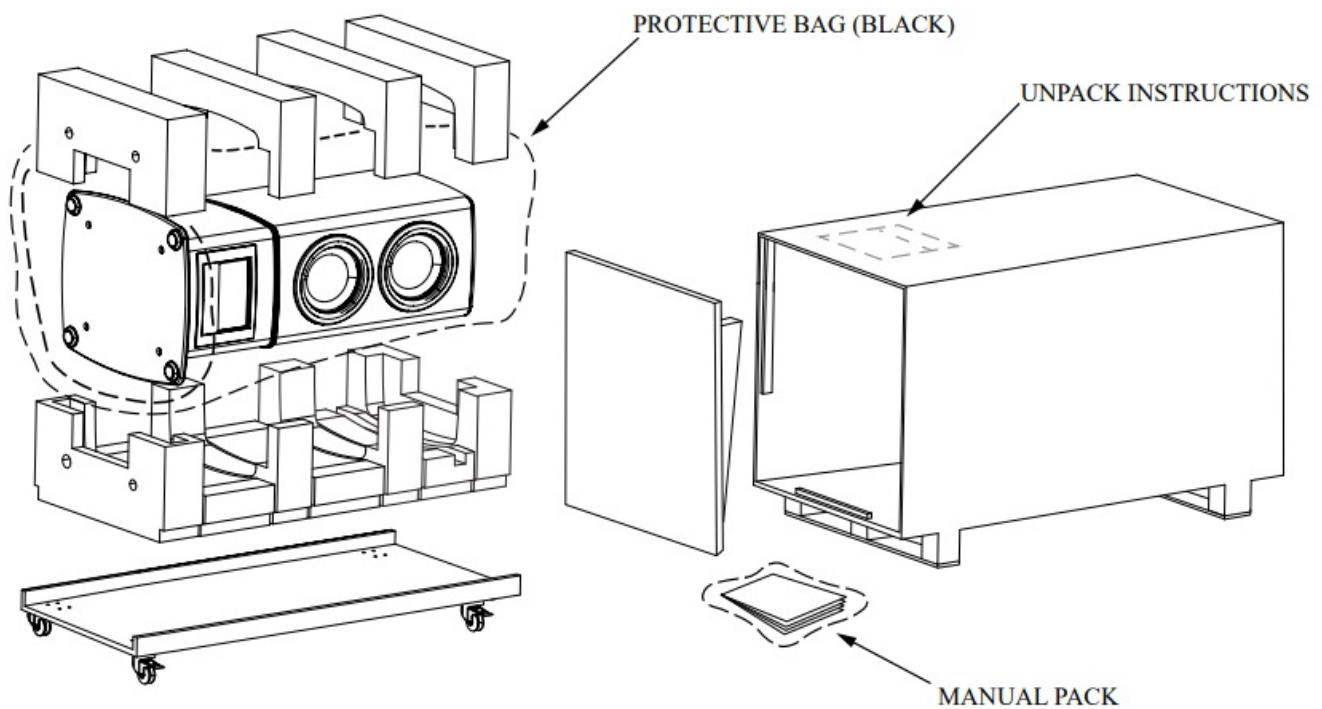
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Packing Instructions

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown in the unpack instructions. Use the original shipping carton and interior parts only if they are all in good serviceable condition. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Refer to page 2. Please see the Part List for the correct part numbers.



Part List

- **Qty Part Number Description**
- 1 034736 Packing List Envelope
- 1 034720 Protective Bag
- 1 753028 Manual Pack
- 1 241308 Unpack Instructions

McIntosh Laboratory, Inc.

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- www.mcintoshlabs.com

The continuous improvement of its products is the policy of McIntosh Laboratory, Inc. who reserve the right to improve design without notice.

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FAQ

Q: Can I remove the safety cover on the rear surface of the PS1K?

A: No, the safety cover should not be removed for any reason to ensure safe operation of the unit.


Q: What type of cable should I use to connect the PS1K?

A: Use the McIntosh Power Control Cable Part No. 170202, which is a shielded cable with two 1/8 inch stereo mini phone plugs.

Q: Is it safe to connect speaker-level output terminals from other devices to the PS1K?

A: No, avoid connecting speaker-level output terminals from receivers, amplifiers, or integrated amplifiers to the inputs of the PS1K to prevent damage.

Documents / Resources

	<p>McIntosh PS1K Powered Subwoofer [pdf] Owner's Manual PS1K Powered Subwoofer, PS1K, Powered Subwoofer, Subwoofer</p>
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References

- [User Manual](#)

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