

MXS **SERIES**

PROFESSIONAL **POWER AMPLIFIER**

MXS3000 4600 Watt Stereo Power Amplifier

MXS3500 5400 Watt Stereo Power Amplifier



OWNER'S MANUAL

SAMSON[®]

Introduction

The Samson MXS Series stereo power amplifiers have been designed to provide solid, clean output with low distortion and wide dynamic range, along with the dependability demanded by professional front-of-house engineers and installers.

The efficient Class H design provides an abundance of power safely into loads as low as 2 ohms, over the full frequency band, from 20 Hz to 20 kHz. Input connections are made via both balanced XLR and balanced ¼" TRS connections. The MXS Series power amplifier provides standard binding posts as well as a Speakon® output connectors. To help you set the correct operating levels, the MXS amplifiers include front panel Signal, Output Level, and Peak LED indicators.

Like all Samson power amplifiers, the MXS Series power amplifiers internal electronics are based around a serious power-core, with robust power supply's built to handle large current demand from bass frequencies. To keep the MXS amplifiers running cool, the design employs forced-air cooling via a temperature-sensitive, variable speed fan, which greatly reduces the chance of thermal and overheating problems. Multi-stage protection for power-up, short circuit, DC output, over current, and thermal, assures high reliability under the most grueling situations.

Optimized for live sound venues, houses of worship, commercial installations, and for driving live PA systems, the MXS amplifiers will deliver reliable power from gig-to-gig and venue-to-venue. In the following pages, you'll find a detailed description of the many features of the MXS Series power amplifier, as well as a guided tour through its front and rear panels, step-by-step instructions for its setup and use, and full specifications.

We recommend you keep the following records for reference, as well as a copy of your sales receipt.

Serial number: _____

Date of purchase: _____

Dealer name: _____

With proper care and maintenance, your MXS power amplifier will operate trouble-free for many years. Should your amplifier ever require servicing, a Return Authorization (RA) number must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for an RA number prior to shipping your unit. Please retain the original packing materials and, if possible, return the unit in its original carton. If your MXS amplifier was purchased outside of the United States, contact your local distributor for warranty details and service information.

Features

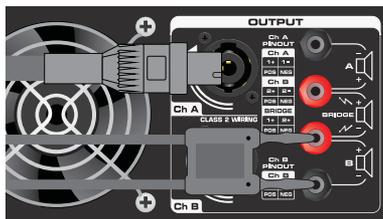


- Lightweight, high-power amplifier for performance and installation speaker configurations:
 - MXS3000: 2 x 1850 Watts at 2 Ω , 2 x 1500 Watts at 4 Ω
4600 Watts at 4 Ω , 3100 Watts at 8 Ω bridged mono
 - MXS3500: 2 x 2700 Watts at 2 Ω , 2 x 1900 Watts at 4 Ω
5400 Watts at 4 Ω , 3700 Watts at 8 Ω bridged mono
- Clean, crisp sound, 0.02% THD, dynamic range of 100 dB, and frequency response of 20 Hz to 20 kHz, guaranty ultra-clean sound quality
- Independent detent input level controls for each channel allow precision adjustments
- Three-position Mode (Mono, Stereo, Bridge Mono) and Filter (28Hz, Full, 120Hz) selector switches
- LED signal indicators for each channel continuously display input signals and output levels
- Four-point protection circuitry (Short Circuit, DC Output, Over Current, Thermal)
- Temperature-sensitive, variable speed fan provides reliable performance without thermal and overheating problems
- Protection relay circuitry that guards against overheating or faulty wiring conditions and also prevents “thumps” when powering on or off
- Input connectors for each channel accommodate both balanced XLR or balanced ¼” TRS plugs
- Output connections are made via binding posts and Speakon® connectors
- The MXS Series power amplifiers can be mounted in any standard 19” rack, making it easy to integrate the amp into any fixed or traveling PA rig
- Rugged construction makes the MXS Series power amplifiers completely roadworthy

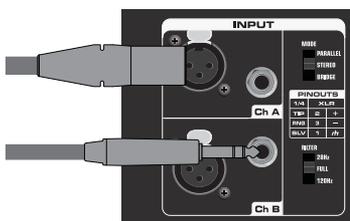
Getting Started with the MXS Power Amplifier

Setting up your MXS Series power amplifier is a simple procedure which takes only a few minutes:

Remove all packing materials (save them in case your units needs future service) and decide where the amplifier is to be physically placed—it can be used free-standing or mounted in a standard 19" rack, requiring two rack spaces. When installed, make sure that both the front and rear panels are unobstructed and that there is good ventilation around the entire unit.



When making speaker connections, use the binding posts, or Speakon® output connectors on the rear panel. It is never a good idea to power up any amplifier that is not connected to loudspeakers.

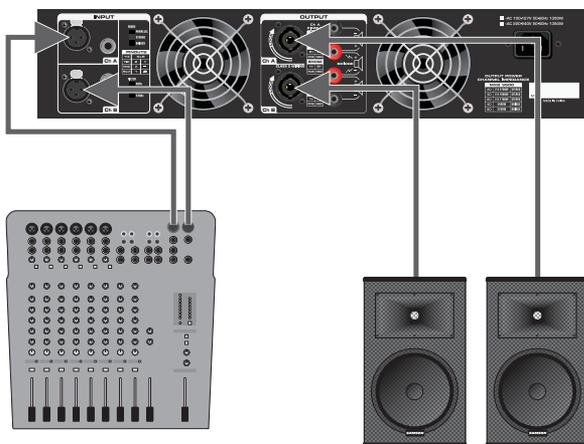


To make the signal input connections, use the input connectors on the rear panel (if operating the amplifier in Parallel mode, use the Ch A input only).

On the front panel of the MXS amplifier, turn both Channel level controls fully counterclockwise (to their minimum setting). Then connect the supplied heavy-gauge 3-pin power cable to the rear panel AC input and to any grounded AC socket.

Turn the Power switch ON.

Apply an input signal to the MXS amplifier at or about +4dBu (if sending signal from a mixer, drive the output meters at approximately 0 vu). While the input signal is present, slowly raise the Channel level controls until the desired sound level is achieved. For the best signal-to-noise ratio, the MXS amplifier should normally be run with the Channel Input controls at or near maximum (fully clockwise) and the PEAK segments should light occasionally (but not frequently) during maximum levels.

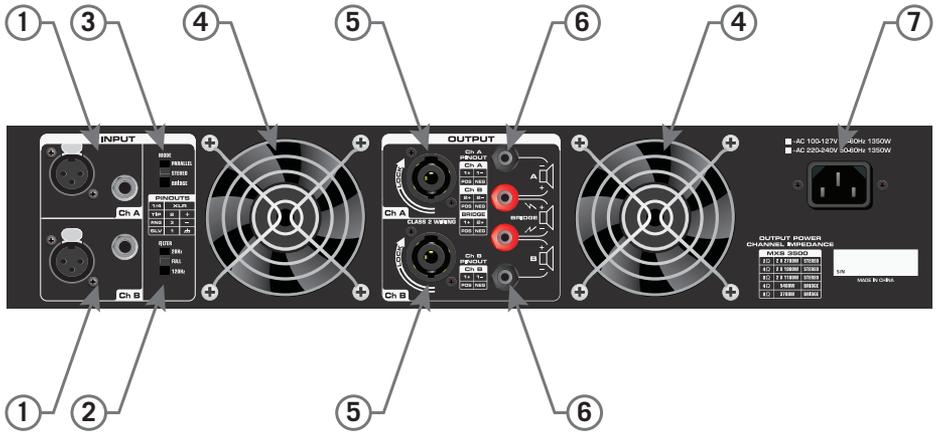


Front Callouts



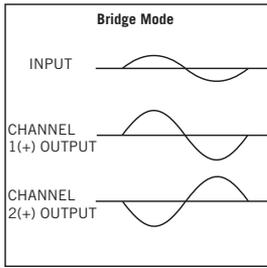
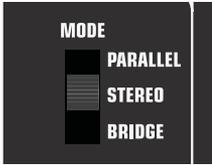
- 1. Power Switch** - Use this switch to power the MXS amplifier on or off
- 2. Channel Level Controls** - Two detent controls to precisely adjust and the match the output level of each channel
- 3. MODE Indicators** - The corresponding indicator lights based off of the setting of the rear panel MODE switch (Stereo, Bridge, Parallel).
- 4. FILTER Indicators** - These LED indicators light depending on the setting of the rear panel FILTER switch (Full, 28Hz, 120Hz).
- 5. Audio Indicators** - The front panel LED indicators monitor the power output level for the corresponding channel:
 - PEAK:** The PEAK indicator lights whenever the channel is outputting signal at full strength. For the best signal-to-noise ratio, the right (PEAK) segment should light occasionally during peak levels; if it lights frequently, you may be overloading the amplifier and a distorted (“clipped”) signal is probably being output.
 - 10:** Lights whenever the output level reaches -10dB below the distortion or clipping
 - SIGNAL:** These LED indicators continuously monitor the input level for the corresponding channel. The SIGNAL LED lights whenever signal is present.

Rear Callouts



- 1. Input Connectors** - Connect incoming signals to these electronically balanced connectors, using either XLR or 1/4" TRS (Tip/Ring/Sleeve) plugs. The amplifier accepts input levels of any strength but needs at least +4 dBu to achieve maximum power. The inputs are wired in parallel, so they can be used to daisy chain out of each channel to a second power amplifier.
- 2. FILTER Switch** - This switch selects the setting of the internal high-pass filter on the audio outputs. When set to the **FULL** position, the filter is bypassed and the amplifier passes the full frequency bandwidth (20Hz to 20kHz) to each output channel. In the **28Hz** position, it sets a high-pass filter at 28Hz on the speaker outputs. This setting is useful for protecting speakers from over-excursion. The **120Hz** position sets a high-pass filter at 120Hz on the speaker outputs. This setting can be used as a crossover for satellite speakers when adding subwoofers to your audio system.
- 3. MODE Switch** - For normal operation, place this three-way switch in the **STEREO** position. When placed in the **PARALLEL** position, the signal arriving at the Ch A input only is routed to the power amplifiers of both Ch A and Ch B (the Ch B input is ignored). When placed in its **BRIDGE** position, the signal arriving at the Ch A input only is again routed to both power amplifiers (the Ch B input is ignored), but the two power amplifiers are bridged together.
- 4. Exhaust Fan** - This variable-speed fan provides cooling to amplifier. Make sure that both the front and rear panels are kept free of all obstructions and that cool, fresh air is accessible at all times.
- 5. Speakon® Output Connectors** - Use these to connect each channel of the amplifier to your loudspeakers.
- 6. Binding Post**-Use these to connect each channel of the amplifier to your loudspeakers. Be sure to connect the loudspeaker correctly, with the red (+) terminal normally connected to the positive input of the speaker and the black (ground) terminal normally connected to the negative input of the speaker.
- 7. AC Input** - Connect the supplied heavy-gauge 3-pin "IEC" power cable here

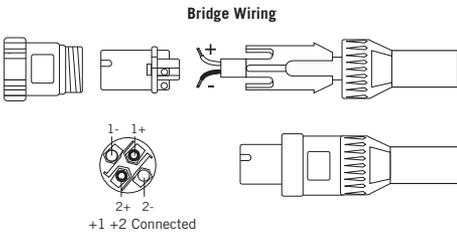
Bridge and Parallel Modes



The MXS amplifiers provide a rear-panel switch that allows it to be used in either a Bridge or Parallel mode. When this switch is placed in the **STEREO** position, the MXS amplifier functions as a true stereo amplifier, where both of the two independent amplifier channels (Ch A and Ch B) can receive different input signals and produce independent output signals. However, when the switch is placed in the **BRIDGE** position, the Ch A input signal is routed to both power amplifiers bridged together, producing a single output signal.

The illustration on the left shows how this works. In Bridge mode, the polarity (phase) of the Ch B output signal is reversed relative to that of the Ch A output signal. Both channels then process the same input signal, with the speaker load connected so that power is derived from both channels. The effective voltage swing seen by the load is thus doubled, so that the power output is multiplied by four.

When using the binding post outputs in Bridge mode, be sure to connect your loudspeaker with the red (+) terminal of the Ch A output connected to the positive input of the speaker and the red (+) terminal of the Ch B output connected to the negative input of the speaker. Do not use the black ground (-) output terminal of either channel.



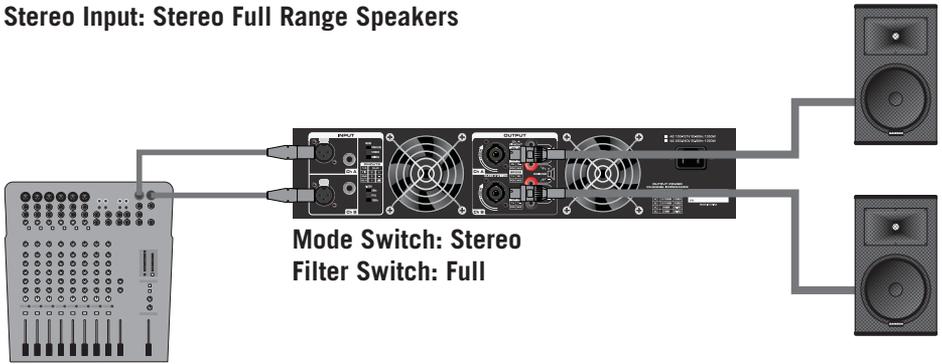
You can also use an Speakon® connector, plugged into the CH A output, wired +1 for the positive input of the speaker and +2 for the negative input of the speaker.

When the rear panel switch is placed in the **PARALLEL** position, the MXS amplifier operates in an input parallel mode. In this mode, only the signal present at the Ch A input is used. This signal is then routed to both the Ch A and Ch B power amplifiers, thus producing a dual mono output.

System Setup Examples

Typical MXS amplifier and speaker configurations:

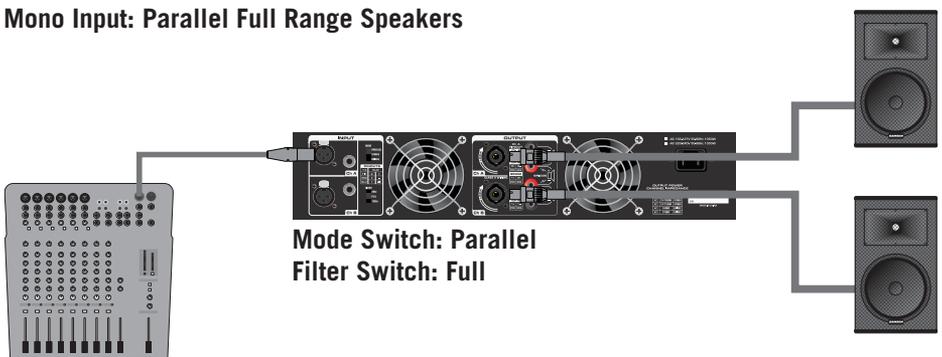
Stereo Input: Stereo Full Range Speakers



Mono Input: Bridge Mono Output



Mono Input: Parallel Full Range Speakers

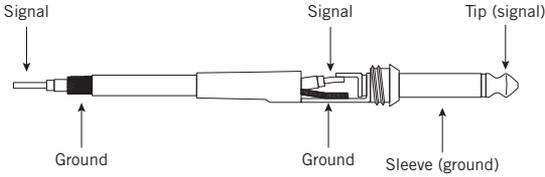


Specifications

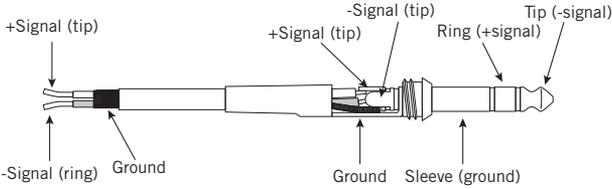
| Model | | MXS3000 | MXS3500 |
|---------------------------------------|---------|---|---------|
| Rated Output Power | | | |
| Stereo both channel driven | 8 ohms | 950W | 1100W |
| | 4 ohms | 1550W | 1900W |
| | 2 ohms | 1850W | 2700W |
| Bridged mono | 8 ohms | 3100W | 3700W |
| | 4 ohms | 4600W | 5400W |
| Signal to Noise Ratio (20Hz-20k) | | >103dB | |
| Distortion (SMPTE-IM) | | 0.02% | |
| Input sensitivity @8ohms Voltage Gain | | 0dBu | |
| Voltage Gain @ 8 ohm | | 38dB | 39dB |
| Output Circuitry | | Class H | |
| Current Consumption (115VAC/230VAC) | | | |
| @1/8 rated power 4ohms | | 670W | 850W |
| @1/3 rated power 4ohms | | 1400W | 1700W |
| @ rated power 4ohms, max. | | 2600W | 3300W |
| Distortion (typical @4 ohms) | | | |
| 20Hz-20kHz,10dB below rated power | | 0.003% | |
| 1kHz,rated power | | 0.007% | |
| Frequency Response @8ohms 1Watt | | 20Hz to 20KHz +0/-0.2dB 4Hz to 50kHz ±3dB | |
| Damping Factor (400Hz) | | >300 | |
| Input Impedance | | Balanced 20K/Unbalanced 10K | |
| Input Clipping | | 0dB | |
| Cooling | | Dual continuously variable speed fan; Back-to-Front air flow | |
| Connectors (each channel) | Inputs | 3-pin XLR and ¼" TRS, balanced | |
| | Outputs | Binding post and Speakon® | |
| Indicators | | Signal, -20dB, -10dB, Limit, Thermal | |
| Protection | | Amplifier protection: Thermal,Short,DC output, mismatched loads Amplifier protection: On/off muting and Delay, Locked the power amplifiers | |
| Dimensions (LxWxH) | | 19" x 14.7" x 3.5" 482mm x 375mm x 88mm | |
| Net Weight | | 21.6lb / 9.8kg | |

Wiring Guide

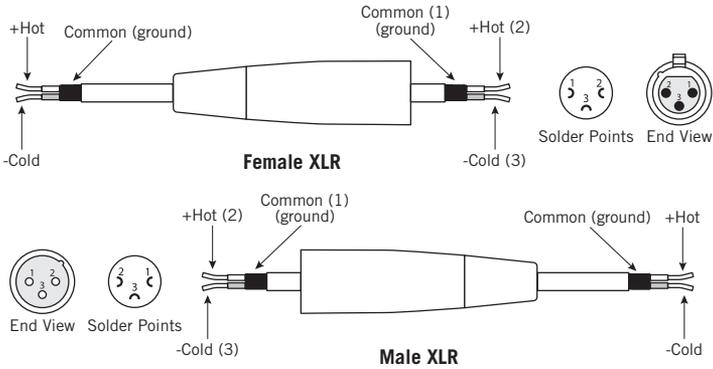
Unbalanced 1/4" Connector



Balanced TRS 1/4" Connector



XLR Balanced Connector



Speakon® Wiring Guide

