Introduction

The Samson MXS2800 is a stereo power amplifier boasting an abundance of power in a lightweight single rack-space design. It has 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 D design provides 1700 watts of stereo power safely into loads as low as 2 ohms, over the full audio frequency band, from 20 Hz to 20 kHz. Connections are made via both balanced XLR and RCA input connectors and Speakon® output connectors. To help you set the correct operating levels, the MXS 2800 amplifiers include front panel Signal Level, Peak and Protection LED indicators.

Like all Samson power amplifiers, the MXS2800's internal electronics are based around a serious power-core, with a robust power supply built to handle large current demand from bass frequencies. To keep the MXS2800 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 portable sound applications but is perfectly suited for live sound venues, houses of worship, commercial installations. The MXS2800 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 MXS2800 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 MXS2800 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 MXS2800 amplifier was purchased outside of the United States, contact your local distributor for warranty details and service information.

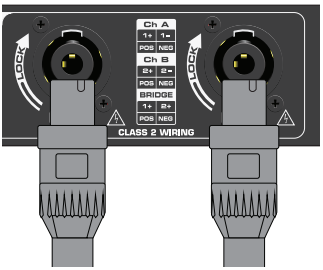
Features

- Lightweight, high-power, single rack-space Class D power amplifier.
- 2 x 1700 Watts at 2Ω, 2 x 850 Watts at 4Ω
  3400 Watts at 4Ω, 1700 Watts at 8Ω bridged mono
- Clean, crisp sound, 0.02% THD, dynamic range of 100 dB, and frequency response of 20 Hz to 20 kHz, guarantee ultra-clean sound quality
- Independent detent level controls for each channel allow precision adjustments
- Stereo and Bridge Mono operation.
- LED signal indicators for each channel continuously display input signals and output levels
- Four-point protection circuitry (Short Circuit, DC Output, Over Current, Thermal)
- Built-in limiter provides peak power delivery while minimizing distortion
- 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
- Inputs for each channel accommodate both balanced XLR or RCA connectors
- Output connections are made via Speakon® connectors
- The MXS2800 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 MXS2800 completely roadworthy

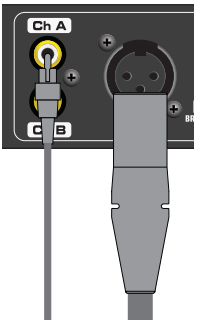
Getting Started with the MXS2800

Setting up your MXS2800 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 a single rack space. 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 Speakon® output connectors on the rear panel. It is never a good idea to power up any amplifier that is not connected to loudspeakers.



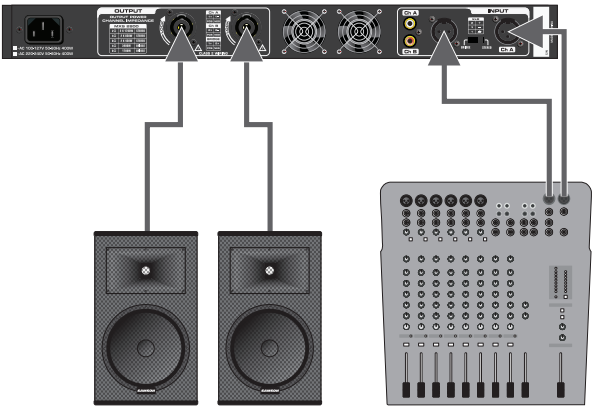
To make the signal input connections, use the input connectors on the rear panel.

On the front panel of the MXS2800, 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.

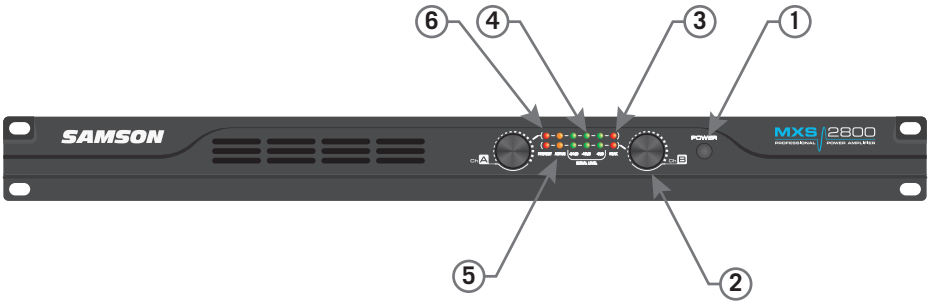
Turn the Power switch ON.

Apply an input signal to the MXS2800 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 MXS2800 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.

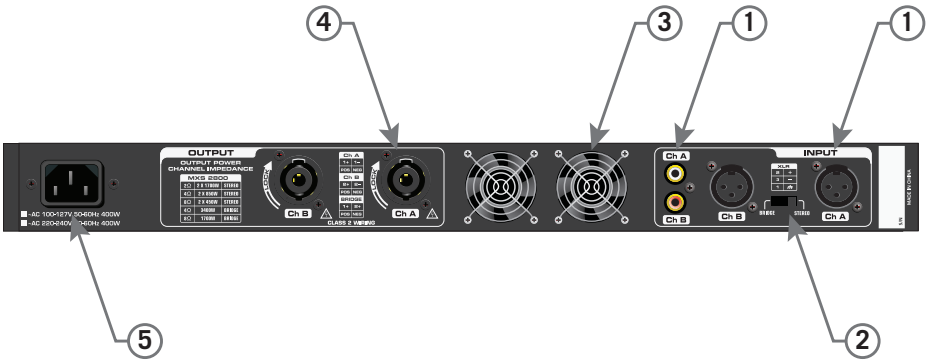


Front Callouts



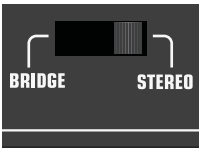
1. **POWER Switch** - Use this push button switch to power the MXS2800 amplifier on or off
2. **Channel Level Controls** - Two detent controls to precisely adjust the output level of each channel.
3. **PEAK -** The PEAK indicator lights whenever the channel is outputting signal at full strength. For 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.
4. **Audio Indicators** - The front panel LED indicators continuously monitor the power output level for the corresponding channel. For optimum signal-to-noise ratio, set the level controls so that -6dB is constantly illuminated, with occasional, but not steady excursions to the red PEAK segment.
5. **ACTIVE Indicators** - These indicators will illuminate when the power switch is turned on and the unit is ready to pass audio.
6. **PROTECT Indicators -** These LED indicators will light when a fault (Short Circuit, DC Output, Over Current, or Thermal) is detected. The indicators will also light when the amplifier is first turned on, until the amplifier is ready to pass audio and the ACTIVE indicators illuminate.

Rear Callouts

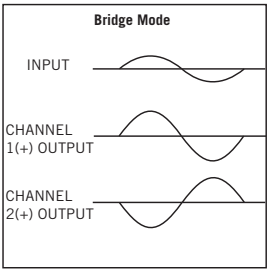


1. **Input Connectors** - Connect incoming signal to these electronically balanced XLR or unbalanced RCA jacks.
2. **MODE Switch** - For normal operation, place this three-way switch in the **STEREO** position. When placed in its **BRIDGE** position, the signal arriving at the Ch A input only is again routed to both power amplifiers (the Ch B input is ignored), but the two power amplifiers are bridged together.
3. **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.
4. **Speakon® Output Connectors** - Use these to connect each channel of the amplifier to your loudspeakers.
5. **AC Input** - Connect the supplied heavy-gauge 3-pin “IEC” power cable here

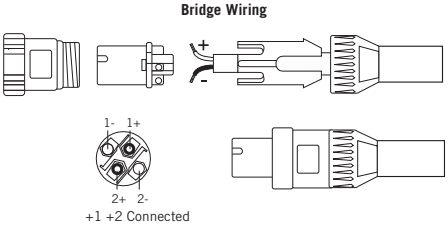
Bridge Mode



The MXS2800 power amplifier provides a rear-panel switch that allows it to be used in either a Stereo or Bridge mode. When this switch is placed in the **STEREO** position, the MXS2800 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.

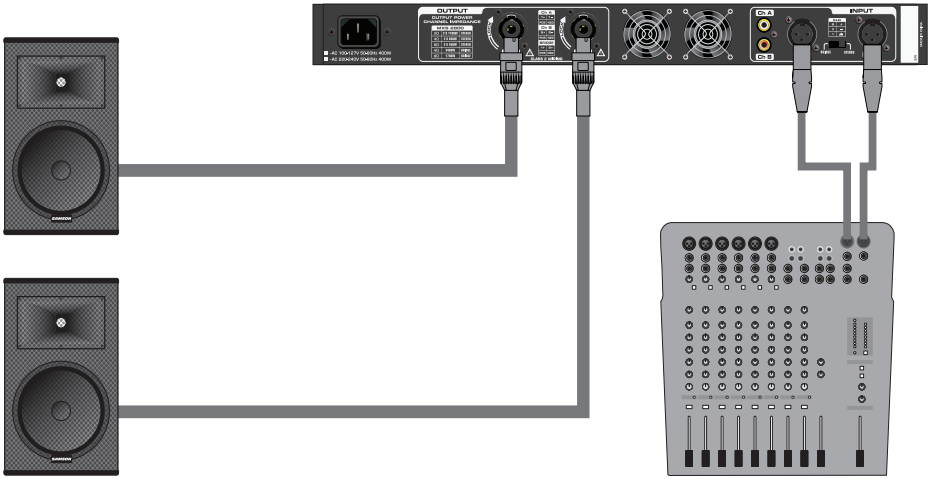


When using the MXS2800 in Bridge mode, connect the amplifier to a loudspeaker using a Speakon® connector plugged into the CH A output, wired +1 for the positive input of the speaker and +2 for the negative input of the speaker.

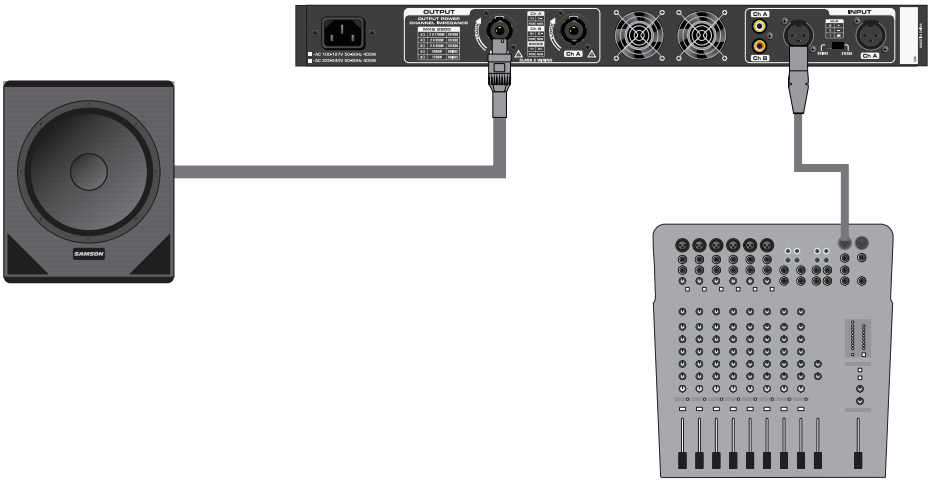
System Setup Examples

Typical amplifier and speaker configurations for the MXS2800:

Stereo Input: Stereo Full Range Speakers



Mono Input: Bridge Mono Output

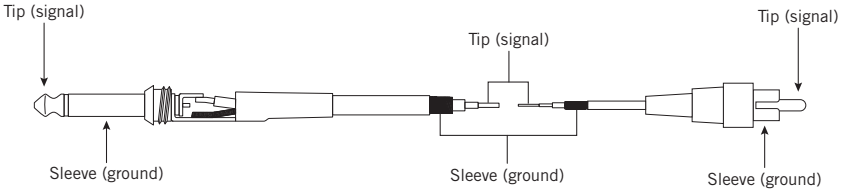


Specifications

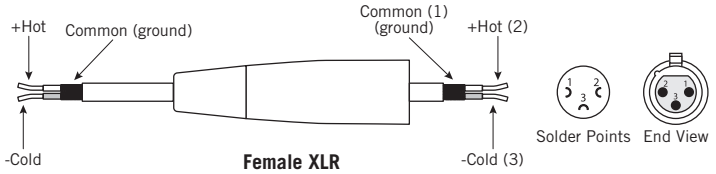
Rated Output Power Stereo both channel driven	8 ohms	450W
	4 ohms	850W
	2 ohms	1700W
Rated Output Power Bridged mono	8 ohms	1700W
	4 ohms	3400W
Signal to Noise Ratio (20Hz-20k)		>100dB
Distortion (SMPTE-IM)		0.02%
Input sensitivity @ 8ohms Voltage Gain		0dBu
Voltage Gain @ 8ohms		35dB
Output Circuitry		Class D
Current Consumption (120VAC/240VAC)	@ 1/8 rated power 4ohms	200 W
	@1/3 rated power 4ohms	460 W
	@ rated power 4ohms, max.	1300 W
Distortion (typical @4 ohms)		
20Hz-20kHz,10dB below rated power		0.02%
1kHz,rated power		0.02%
Frequency Response @ 8ohms 1Watt		20Hz to 20KHz,+0/-1dB 14Hz to 28kHz ±3dB
Damping Factor (400Hz)		>160 @ 8ohms
Input Impedance		20K ohm (balanced)
Input Clipping		0dB
Cooling		Continuously variable speed fan, back-to-front air flow
Connectors (each channel)	Inputs	Balanced XLR and RCA inputs
	Outputs	Speakon® locking connectors
Controls		Power switch, CH A & CH B volume, Parallel/Stereo/Bridge switch, Filter switch
Indicators		Protect, Active, Peak, -24dB, -12dB, -6dB
Protection		Amplifier protection: Thermal and DC protection Load protection: On/off muting, DC-fault power supply shutdown
Dimensions (LxWxH)		19" x 17.2" x 1.73" 482mm x 437mm x 44mm
Net Weight		8.8lb / 4kg

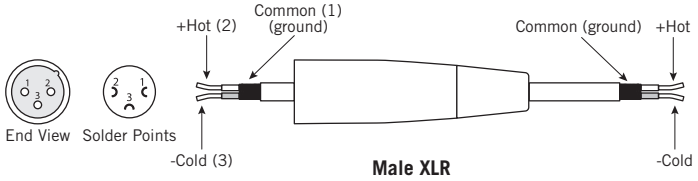
Wiring Guide

RCA Connector



XLR Balanced Connector





Speakon® Wiring Guide